FIG. 1A

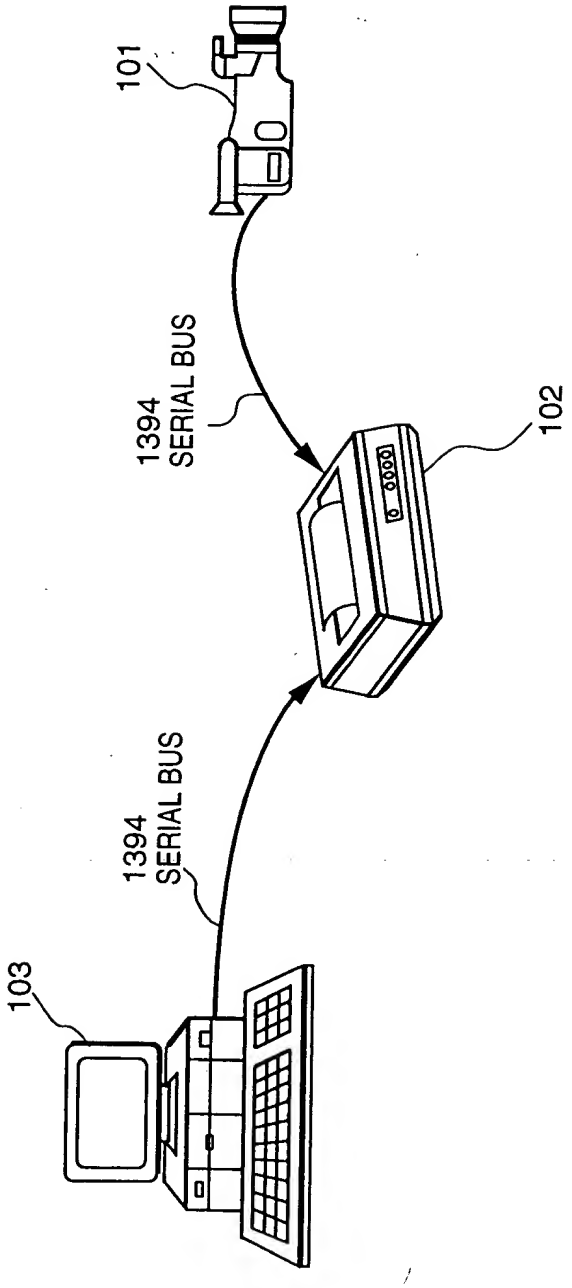


FIG. 1B

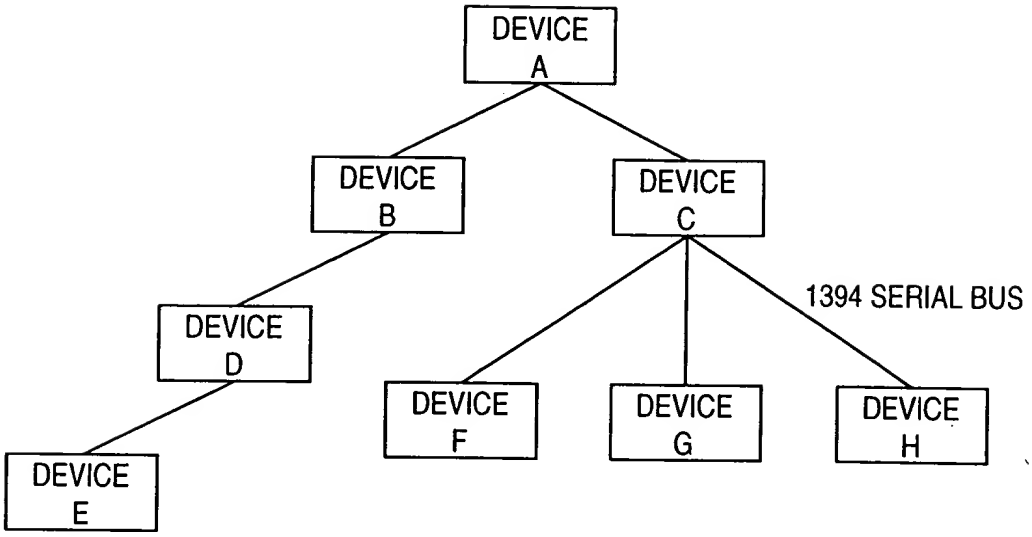

DEVICE A
DEVICE B
DEVICE C
DEVICE D
DEVICE E
DEVICE F
DEVICE G
DEVICE H
1394 SERIAL BUS

FIG. 2

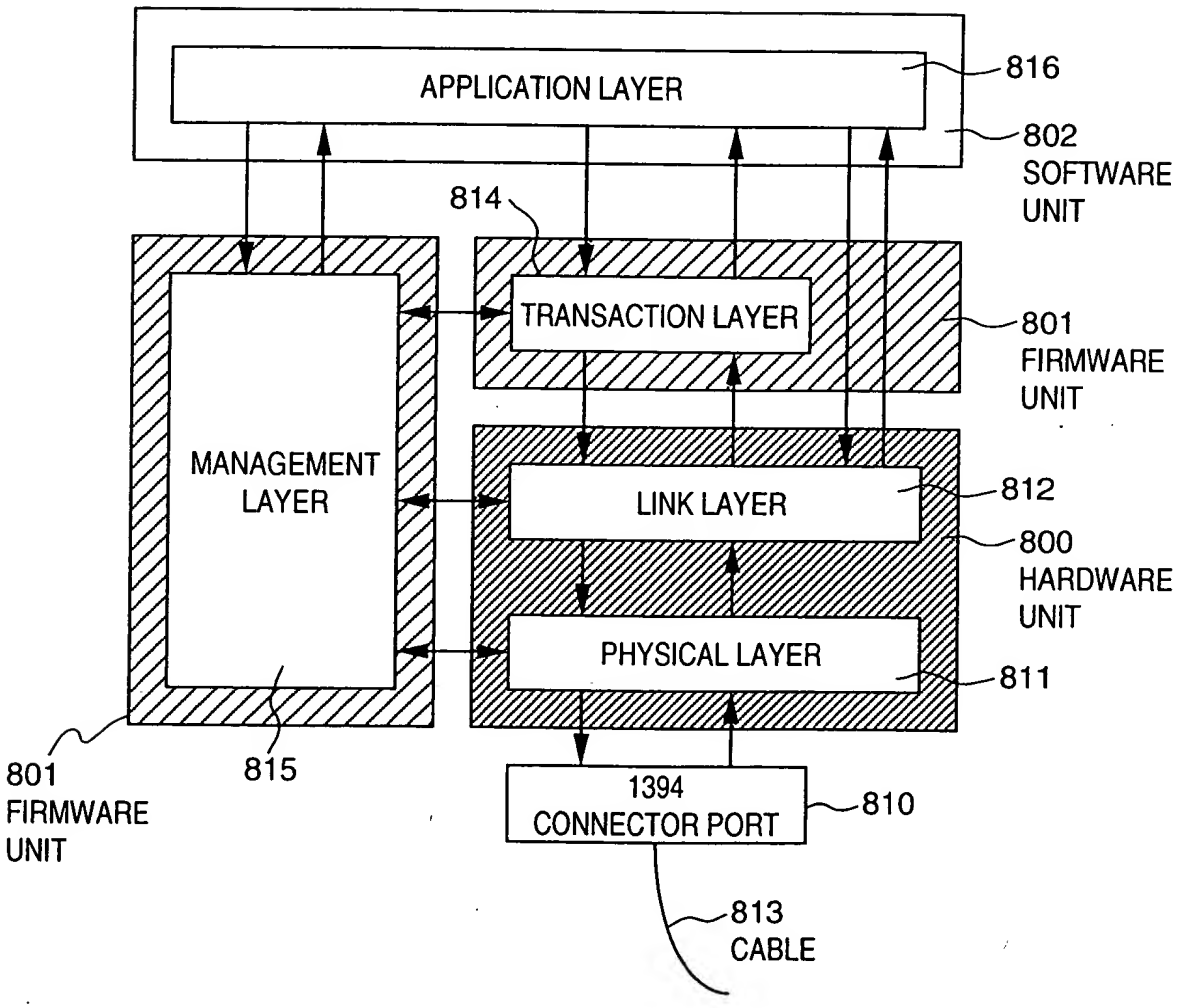

APPLICATION LAYER
816
802
SOFTWARE
UNIT
814
TRANSACTION LAYER
801
FIRMWARE
UNIT
MANAGEMENT
LAYER
LINK LAYER
812
800
HARDWARE
UNIT
PHYSICAL LAYER
811
801
FIRMWARE
UNIT
815
1394
CONNECTOR PORT
810
813
CABLE

FIG. 3

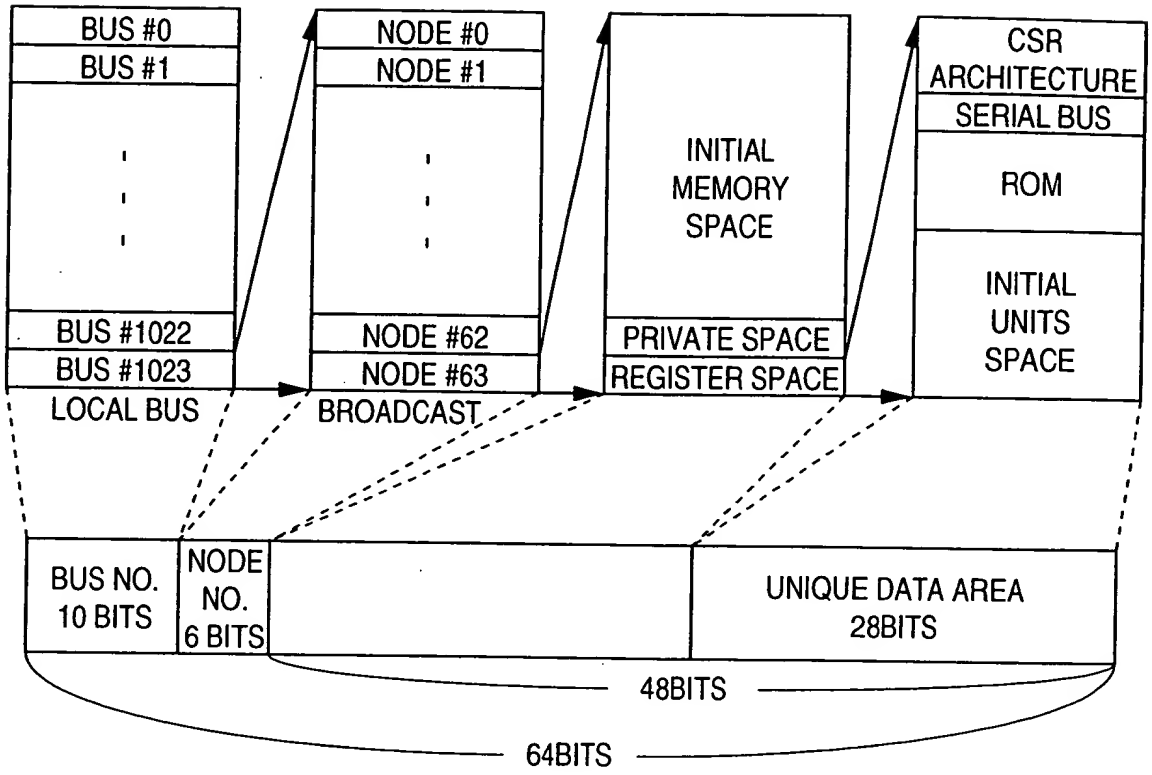

BUS #0
BUS #1
BUS #1022
BUS #1023
LOCAL BUS
NODE #0
NODE #1
NODE #62
NODE #63
BROADCAST
INITIAL MEMORY SPACE
PRIVATE SPACE
REGISTER SPACE
CSR ARCHITECTURE
SERIAL BUS
ROM
INITIAL UNITS SPACE
BUS NO. 10 BITS
NODE NO. 6 BITS
UNIQUE DATA AREA 28BITS
48BITS
64BITS

FIG. 4

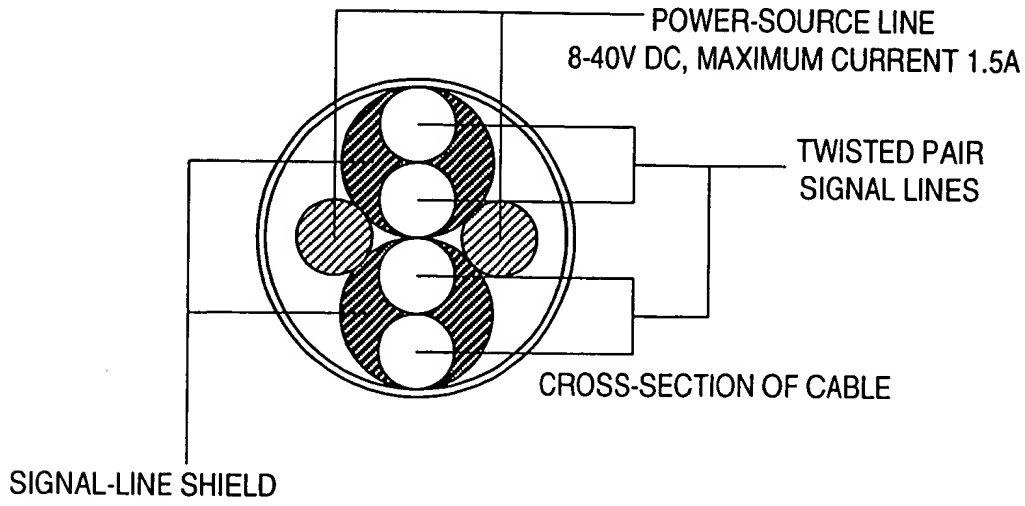
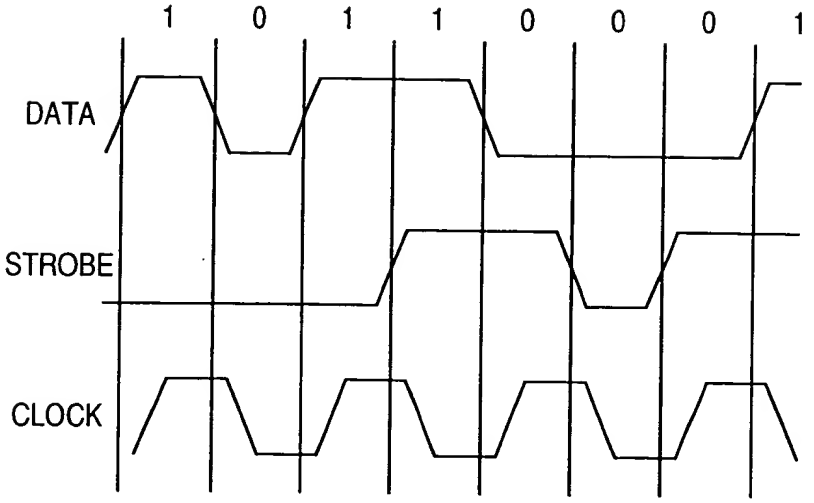

POWER-SOURCE LINE
8-40V DC, MAXIMUM CURRENT 1.5A
TWISTED PAIR SIGNAL LINES
CROSS-SECTION OF CABLE
SIGNAL-LINE SHIELD

FIG. 5



CLOCK : EXCLUSIVE-OR SIGNAL BETWEEN DATA AND STROBE

FIG. 6

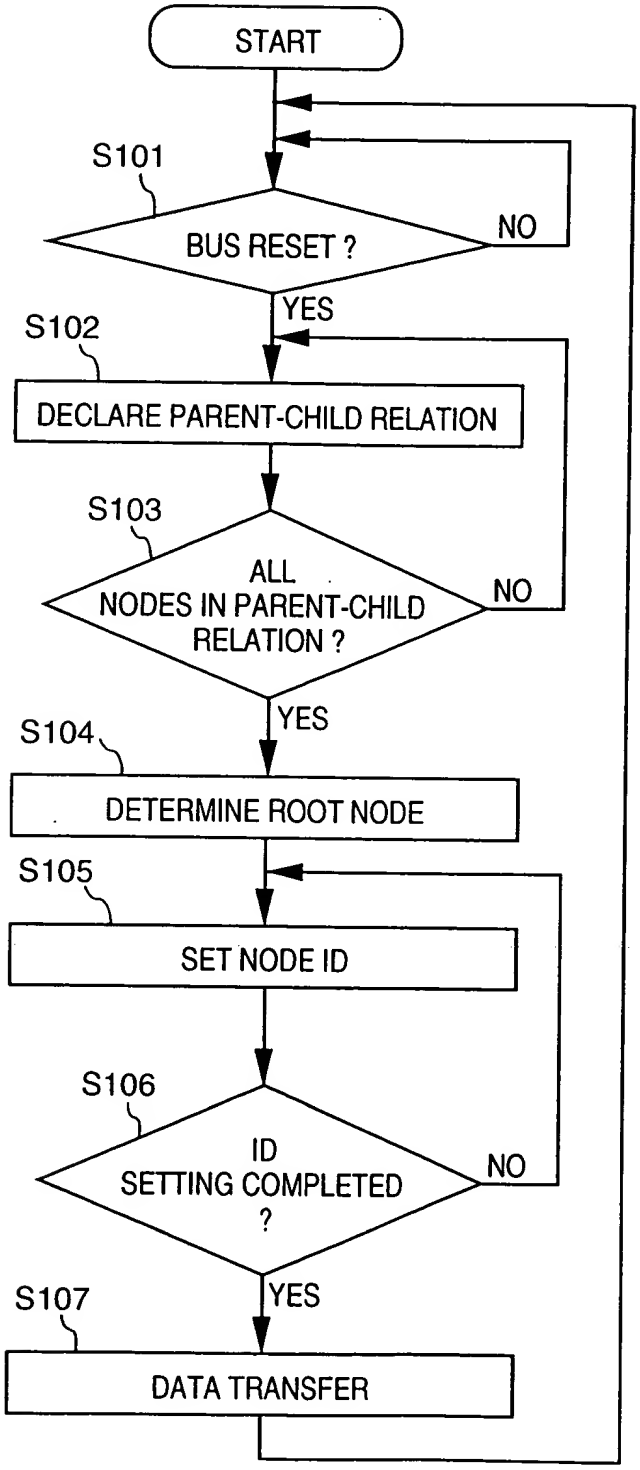

START
S101
BUS RESET ?
NO
YES
S102
DECLARE PARENT-CHILD RELATION
S103
ALL NODES IN PARENT-CHILD RELATION ?
NO
YES
S104
DETERMINE ROOT NODE
S105
SET NODE ID
S106
ID SETTING COMPLETED ?
NO
YES
S107
DATA TRANSFER

FIG. 7

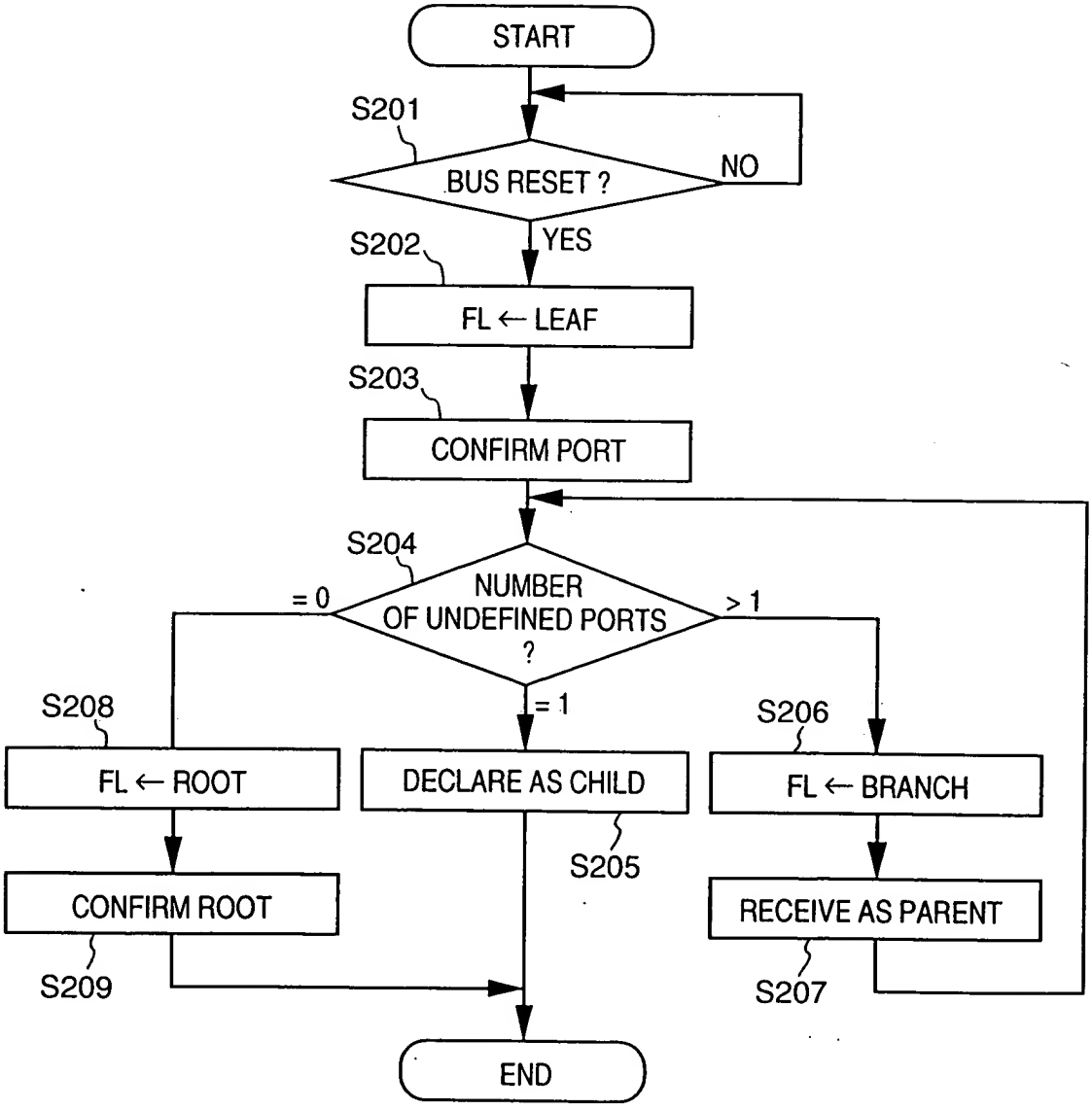

START
S201
BUS RESET ?
NO
YES
S202
FL ← LEAF
S203
CONFIRM PORT
S204
NUMBER OF UNDEFINED PORTS ?
= 0
= 1
> 1
S208
FL ← ROOT
CONFIRM ROOT
S209
DECLARE AS CHILD
S205
S206
FL ← BRANCH
RECEIVE AS PARENT
S207
END

FIG. 8

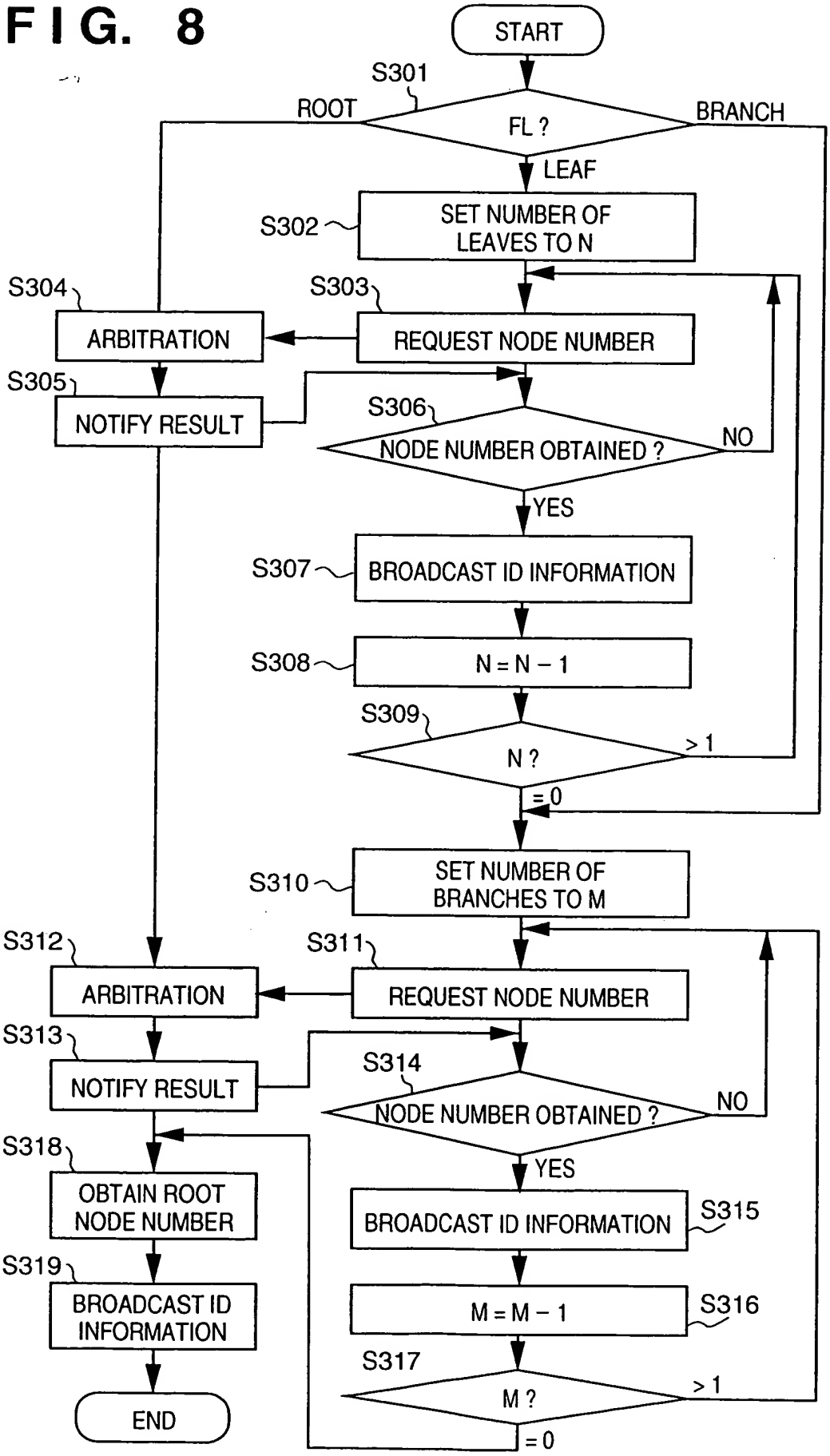
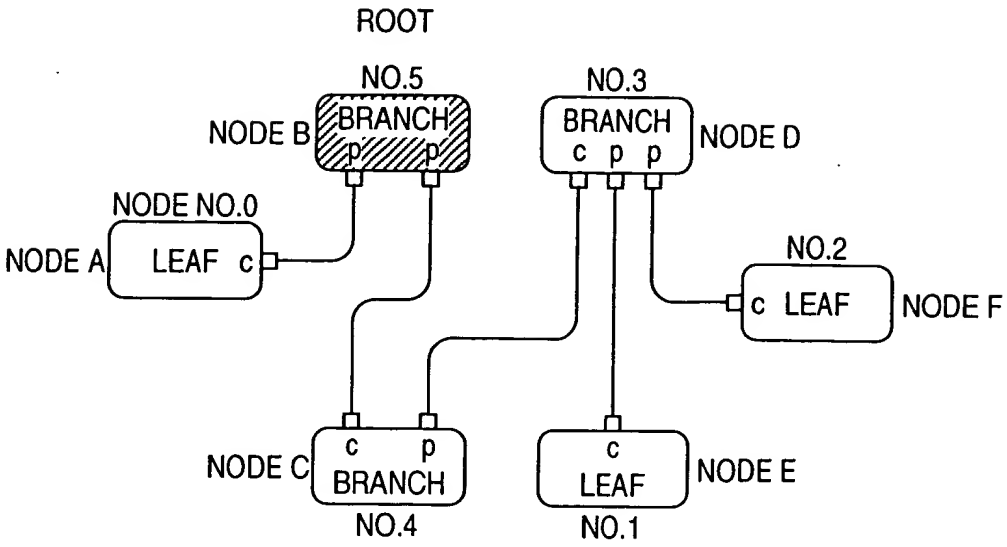

START
S301
ROOT
FL ?
BRANCH
LEAF
S302
SET NUMBER OF LEAVES TO N
S304
S303
ARBITRATION
REQUEST NODE NUMBER
S305
NOTIFY RESULT
S306
NODE NUMBER OBTAINED ?
NO
YES
S307
BROADCAST ID INFORMATION
S308
N = N − 1
S309
N ?
> 1
= 0
S310
SET NUMBER OF BRANCHES TO M
S312
S311
ARBITRATION
REQUEST NODE NUMBER
S313
NOTIFY RESULT
S314
NODE NUMBER OBTAINED ?
NO
YES
S318
OBTAIN ROOT NODE NUMBER
S315
BROADCAST ID INFORMATION
S319
BROADCAST ID INFORMATION
S316
M = M − 1
S317
M ?
> 1
= 0
END

FIG. 9



BRANCH : NODE WITH TWO OR MORE NODE CONNECTIONS

LEAF : NODE WITH SINGLE PORT CONNECTION

□ : PORT
c : PORT CORRESPONDING TO CHILD NODE
p : PORT CORRESPONDING TO PARENT NODE

FIG. 10A

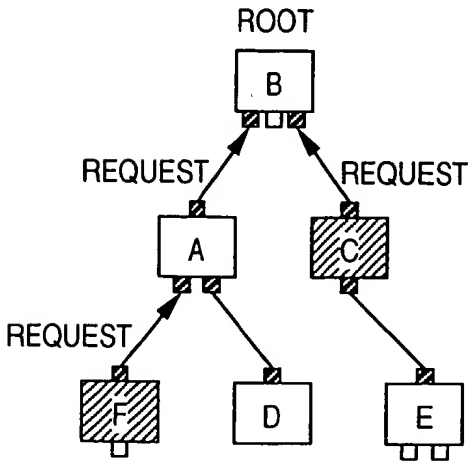


FIG. 10B

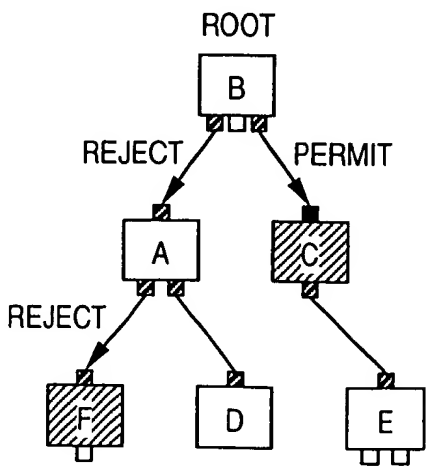


FIG. 11

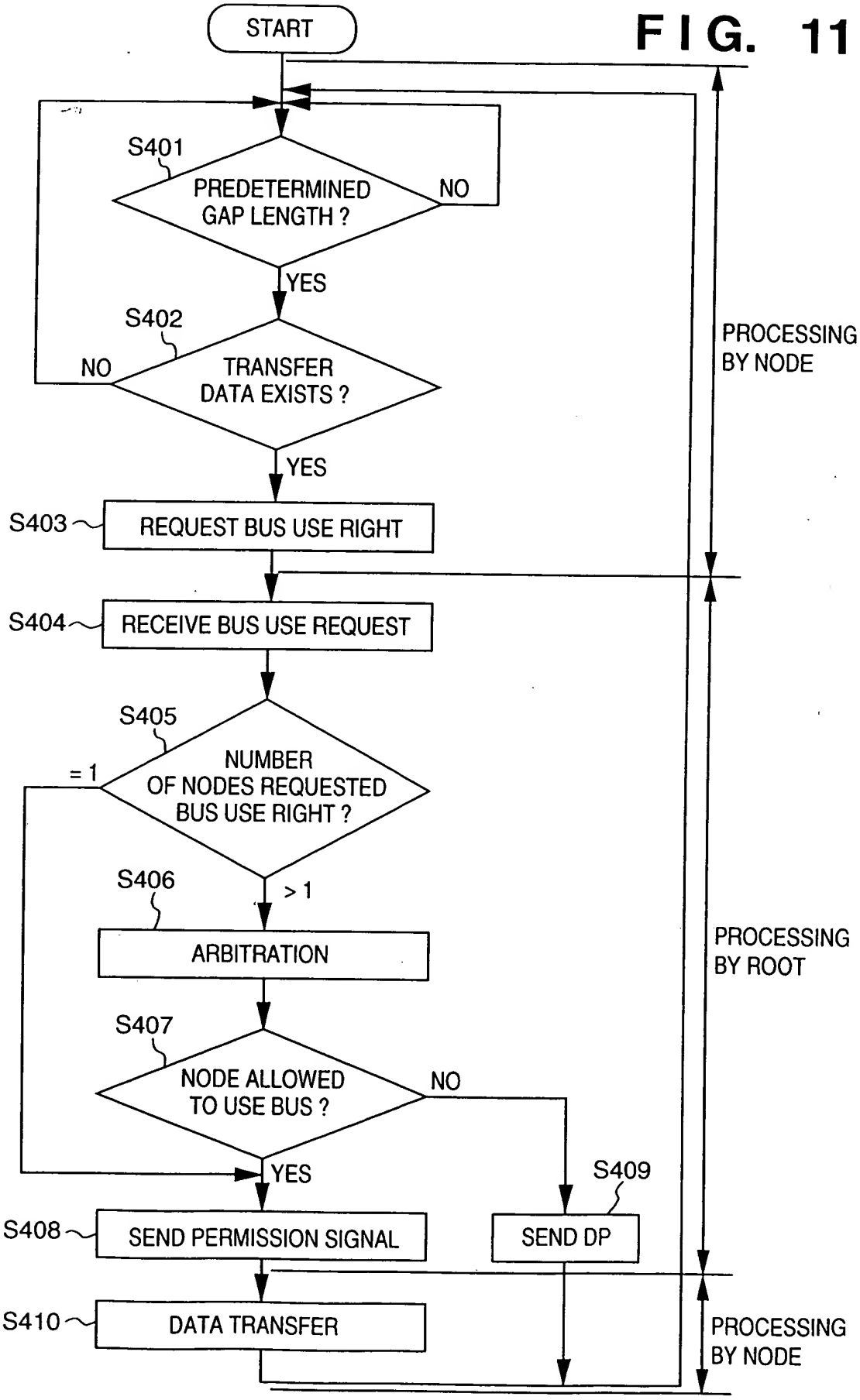

START
S401
PREDETERMINED GAP LENGTH ?
NO
YES
S402
NO
TRANSFER DATA EXISTS ?
YES
S403
REQUEST BUS USE RIGHT
S404
RECEIVE BUS USE REQUEST
S405
= 1
NUMBER OF NODES REQUESTED BUS USE RIGHT ?
S406
> 1
ARBITRATION
S407
NODE ALLOWED TO USE BUS ?
NO
YES
S409
S408
SEND PERMISSION SIGNAL
SEND DP
S410
DATA TRANSFER
PROCESSING BY NODE
PROCESSING BY ROOT
PROCESSING BY NODE

FIG. 12

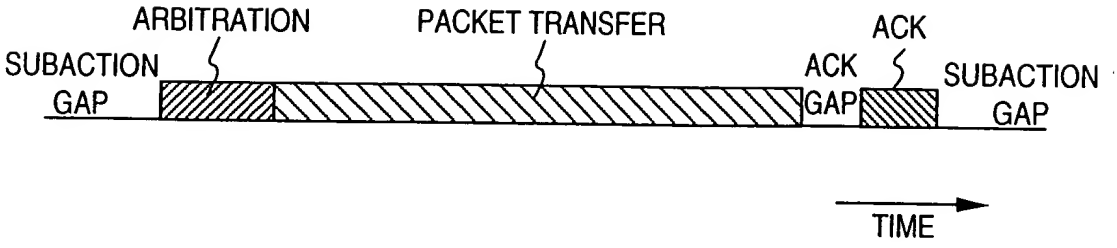

ARBITRATION
PACKET TRANSFER
ACK
SUBACTION GAP
ACK GAP
SUBACTION GAP
TIME

FIG. 13

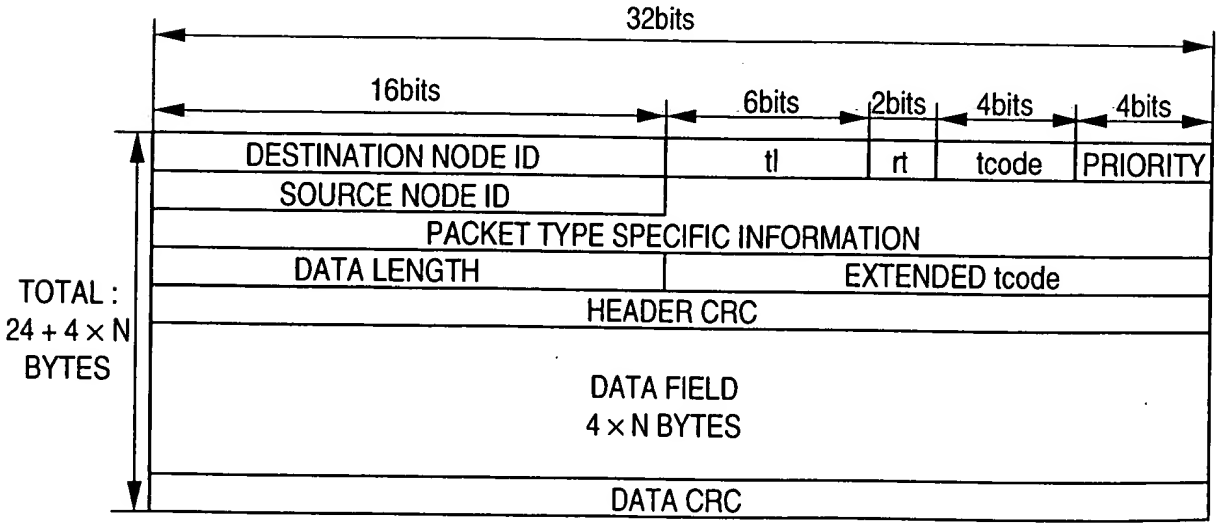

32bits
16bits
6bits
2bits
4bits
4bits
DESTINATION NODE ID
tl
rt
tcode
PRIORITY
SOURCE NODE ID
PACKET TYPE SPECIFIC INFORMATION
DATA LENGTH
EXTENDED tcode
HEADER CRC
DATA FIELD
4 × N BYTES
DATA CRC
TOTAL :
24 + 4 × N
BYTES

FIG. 14

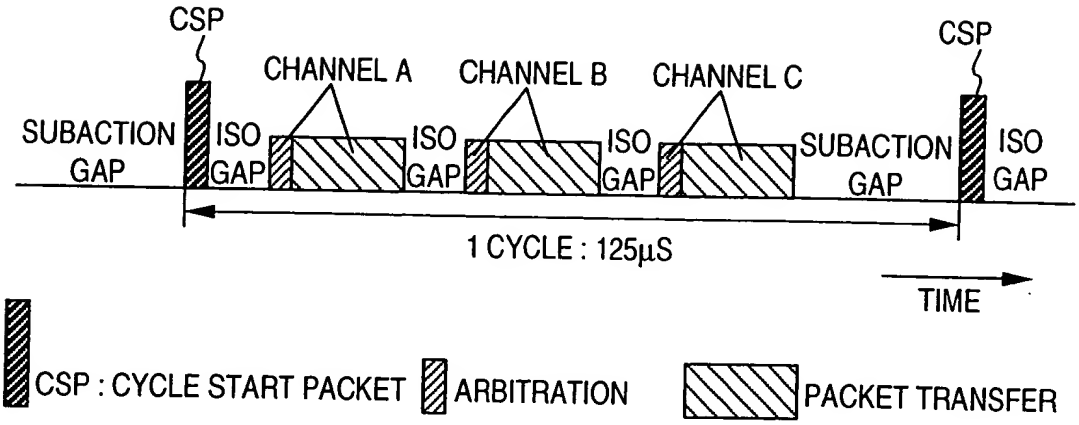


FIG. 15A

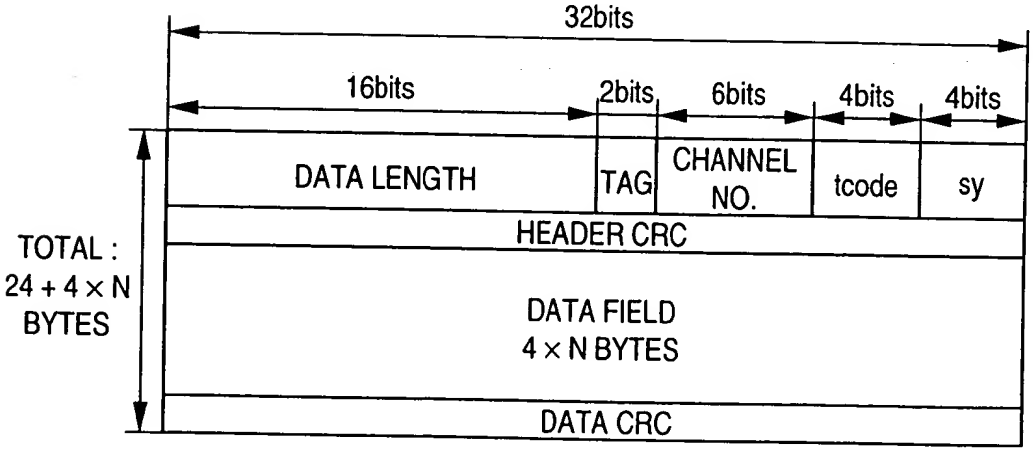


FIG. 15B

ABBREVIATION	NAME	CONTENT
destination_ID	destination identifier	ID OF DESTINATION NODE (ASYNCHRONOUS ONLY)
t1	transaction label	LABEL INDICATING A SERIES OF TRANSACTIONS (ASYNCHRONOUS ONLY)
rt	retry code	CODE INDICATING RETRANSMISSION STATUS (ASYNCHRONOUS ONLY)
tcode	transaction code	CODE INDICATING PACKET TYPE (ASYNCHRONOUS ONLY)
pri	priority	PRIORITY ORDER (ASYNCHRONOUS ONLY)
source_ID	source identifier	SOURCE NODE (ASYNCHRONOUS ONLY)
destination_ offset	destination memory address	MEMORY ADDRESS OF DESTINATION NODE (ASYNCHRONOUS ONLY)
rcode	response code	RESPONSE STATUS (ASYNCHRONOUS ONLY)
quadiet_data	quadiet(4bytes) data	4-BYTE LENGTH DATA (ASYNCHRONOUS ONLY)
data_length	length of data	LENGTH OF data_field (EXCEPT pad bytes)
extended_tcode	extended transaction code	EXTENDED TRANSACTION CODE (ASYNCHRONOUS ONLY)
chanel	isochronous identifier	IDENTIFICATION OF ISOCHRONOUS PACKET
sy	synchronization code	SYNCHRONIZATION OF VIDEO IMAGE AND AUDIO INFORMATION
cycle_time_data	contents of the CYCLE_TIME register	CYCLE TIMER REGISTER VALUE OF CYCLE MASTER NODE (CYCLE PACKET ONLY)
data_field	data + pad bytes	DATA STORAGE (ISOCHRONOUS AND ASYNCHRONOUS)
header_CRC	CRC for header field	CRC FOR HEADER
data_CRC	CRC for data field	CRC FOR DATA
tag	tag label	ISOCHRONOUS PACKET FORMAT

FIG. 16

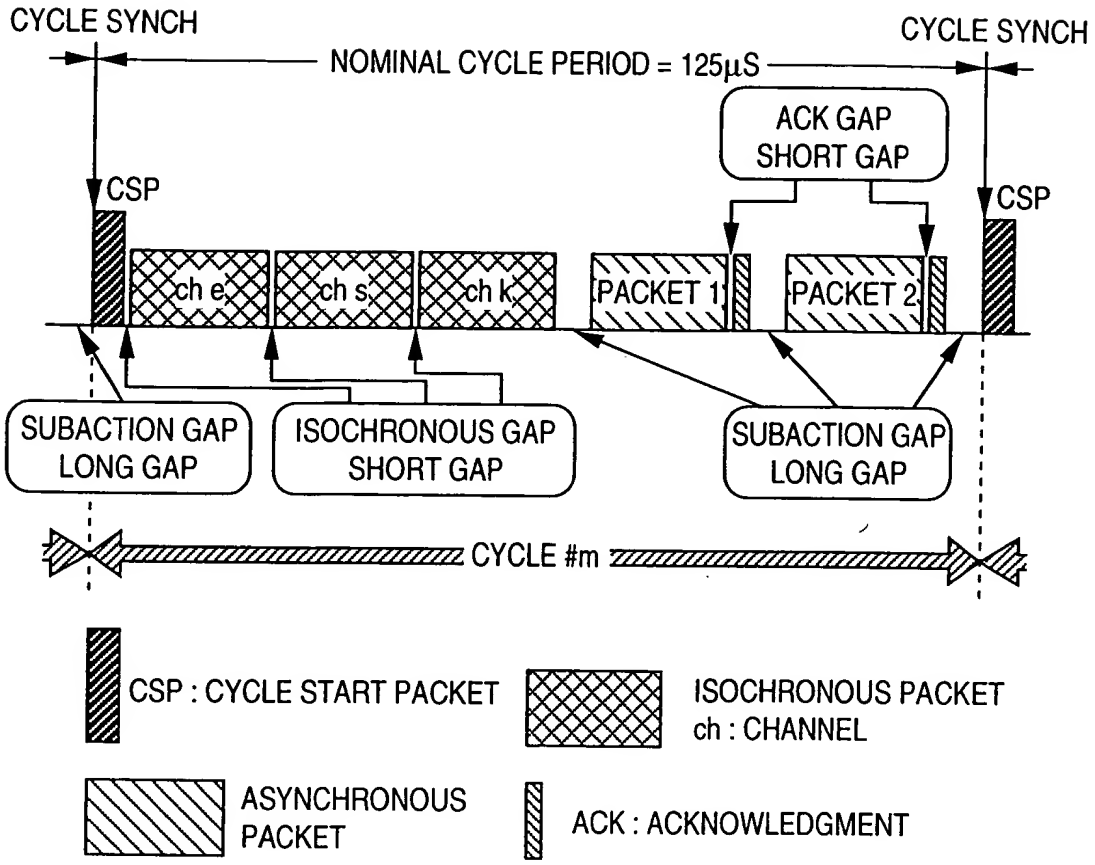

CYCLE SYNCH
NOMINAL CYCLE PERIOD = 125μS
CYCLE SYNCH
ACK GAP
SHORT GAP
CSP
CSP
ch e
ch s
ch k
PACKET 1
PACKET 2
SUBACTION GAP
LONG GAP
ISOCHRONOUS GAP
SHORT GAP
SUBACTION GAP
LONG GAP
CYCLE #m
CSP : CYCLE START PACKET
ISOCHRONOUS PACKET
ch : CHANNEL
ASYNCHRONOUS
PACKET
ACK : ACKNOWLEDGMENT

FIG. 17

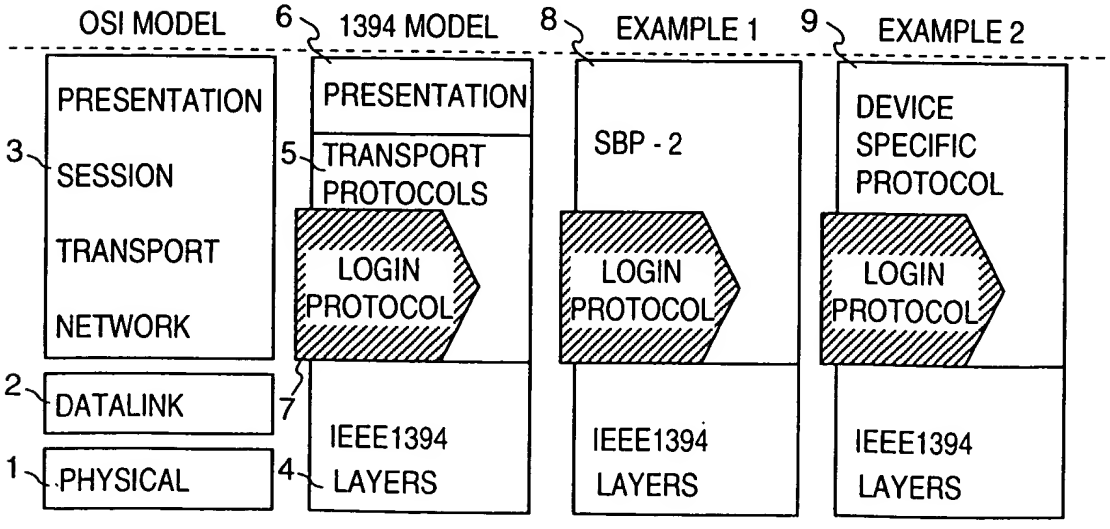

OSI MODEL
6
1394 MODEL
8
EXAMPLE 1
9
EXAMPLE 2
PRESENTATION
3
SESSION
TRANSPORT
NETWORK
2
DATALINK
1
PHYSICAL
PRESENTATION
5
TRANSPORT
PROTOCOLS
LOGIN
PROTOCOL
7
IEEE1394
4
LAYERS
SBP - 2
LOGIN
PROTOCOL
IEEE1394
LAYERS
DEVICE
SPECIFIC
PROTOCOL
LOGIN
PROTOCOL
IEEE1394
LAYERS

FIG. 18

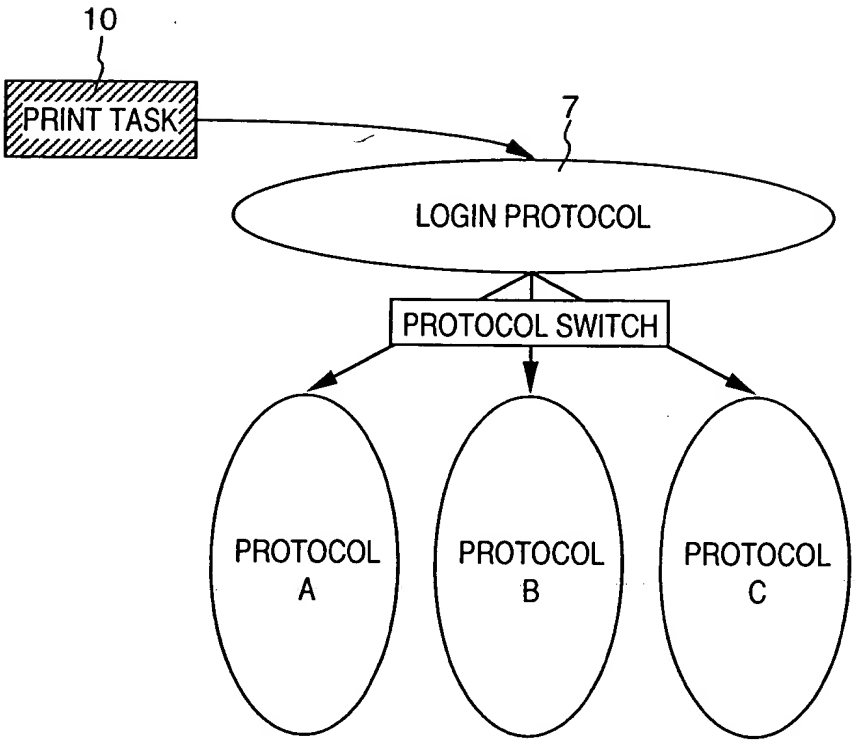

10
PRINT TASK
7
LOGIN PROTOCOL
PROTOCOL SWITCH
PROTOCOL A
PROTOCOL B
PROTOCOL C

FIG. 19

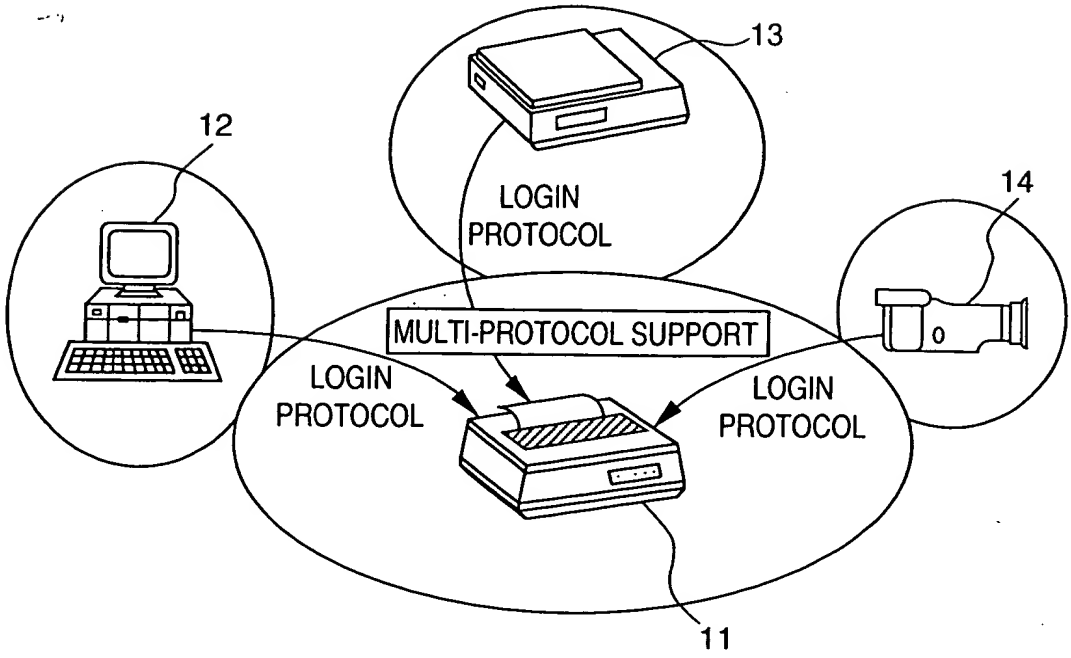

13
12
14
LOGIN
PROTOCOL
MULTI-PROTOCOL SUPPORT
LOGIN
PROTOCOL
LOGIN
PROTOCOL
11

FIG. 20

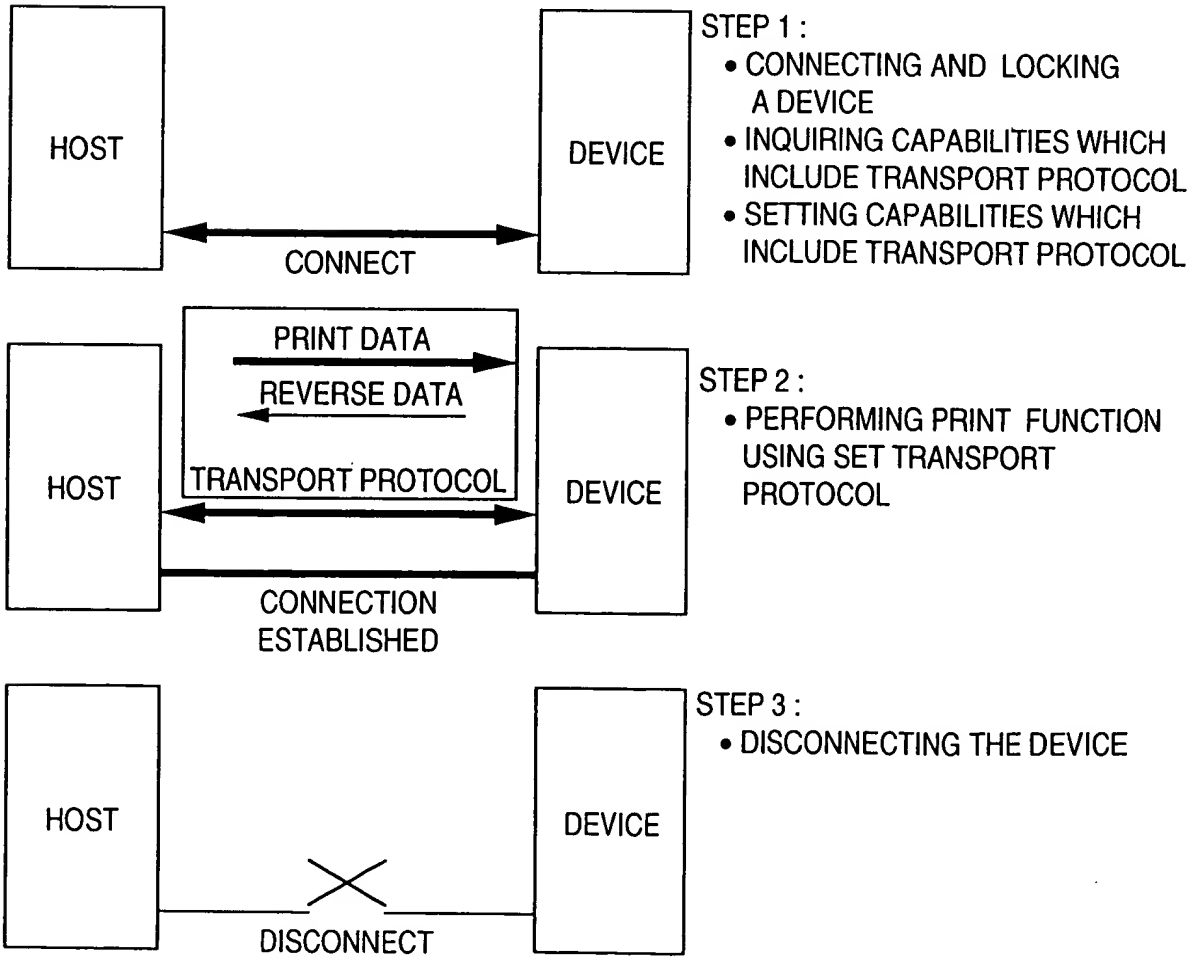

HOST
DEVICE
CONNECT
STEP 1 :
• CONNECTING AND LOCKING A DEVICE
• INQUIRING CAPABILITIES WHICH INCLUDE TRANSPORT PROTOCOL
• SETTING CAPABILITIES WHICH INCLUDE TRANSPORT PROTOCOL
PRINT DATA
REVERSE DATA
TRANSPORT PROTOCOL
HOST
DEVICE
CONNECTION ESTABLISHED
STEP 2 :
• PERFORMING PRINT FUNCTION USING SET TRANSPORT PROTOCOL
HOST
DEVICE
DISCONNECT
STEP 3 :
• DISCONNECTING THE DEVICE

FIG. 21

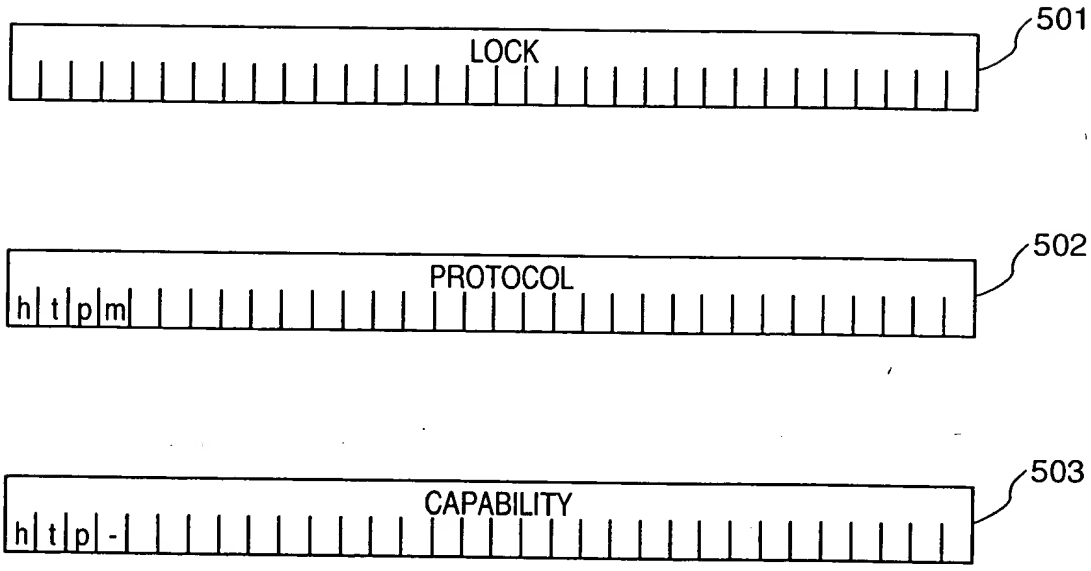


FIG. 22

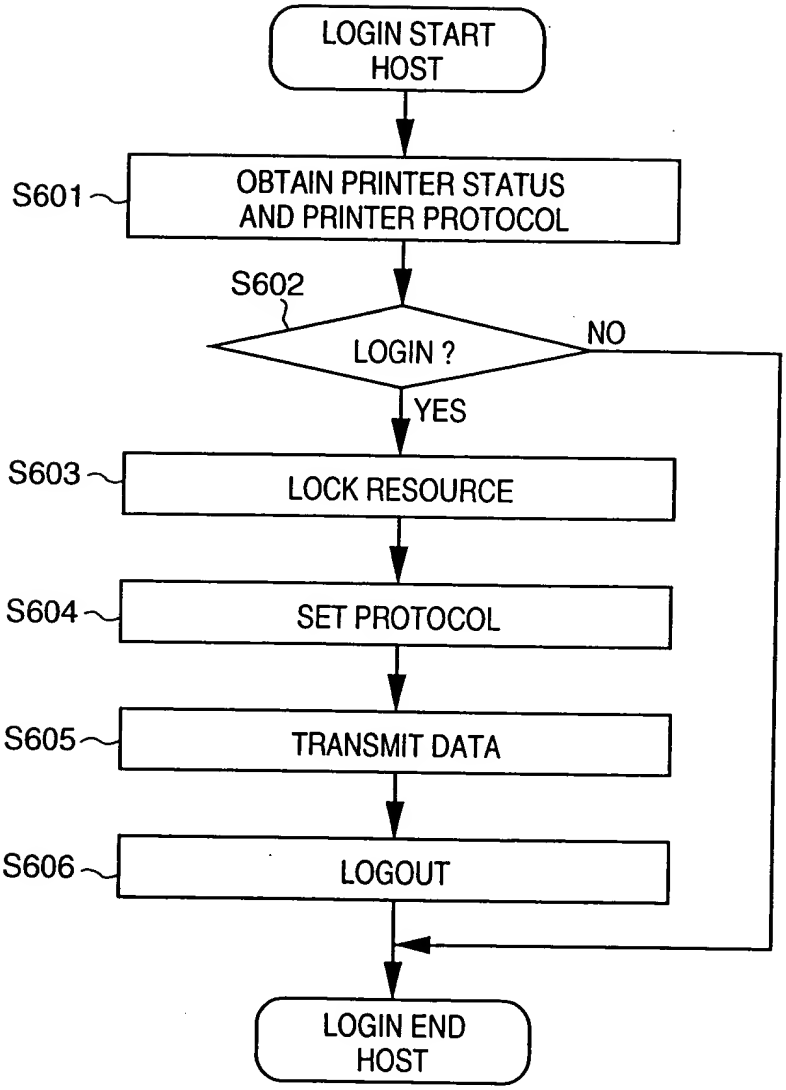

LOGIN START
HOST
S601
OBTAIN PRINTER STATUS
AND PRINTER PROTOCOL
S602
LOGIN ?
NO
YES
S603
LOCK RESOURCE
S604
SET PROTOCOL
S605
TRANSMIT DATA
S606
LOGOUT
LOGIN END
HOST

FIG. 23

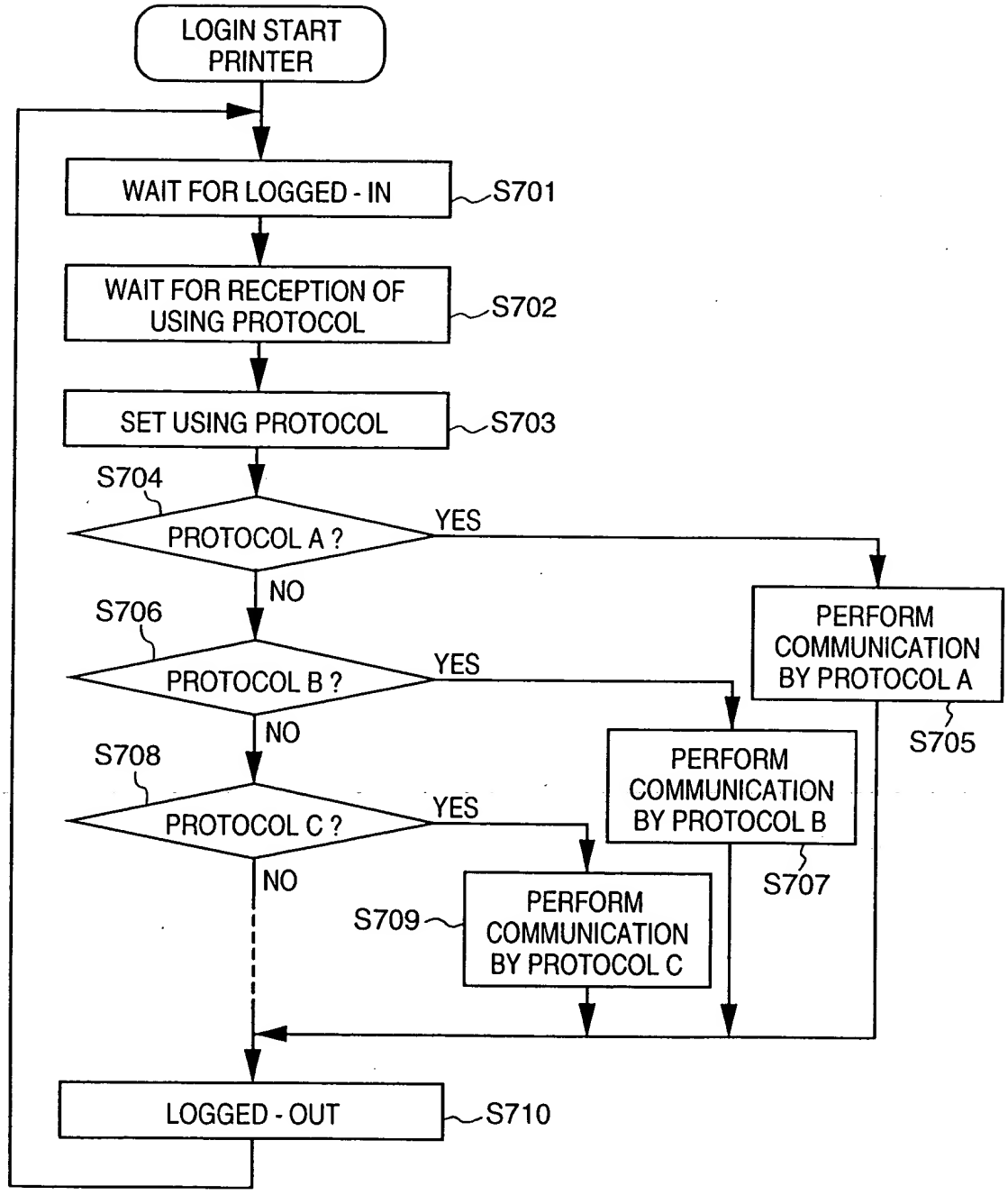

LOGIN START PRINTER
WAIT FOR LOGGED - IN
S701
WAIT FOR RECEPTION OF USING PROTOCOL
S702
SET USING PROTOCOL
S703
S704
PROTOCOL A ?
YES
NO
S706
PROTOCOL B ?
YES
NO
S708
PROTOCOL C ?
YES
NO
PERFORM COMMUNICATION BY PROTOCOL A
S705
PERFORM COMMUNICATION BY PROTOCOL B
S707
S709
PERFORM COMMUNICATION BY PROTOCOL C
LOGGED - OUT
S710

FIG. 24

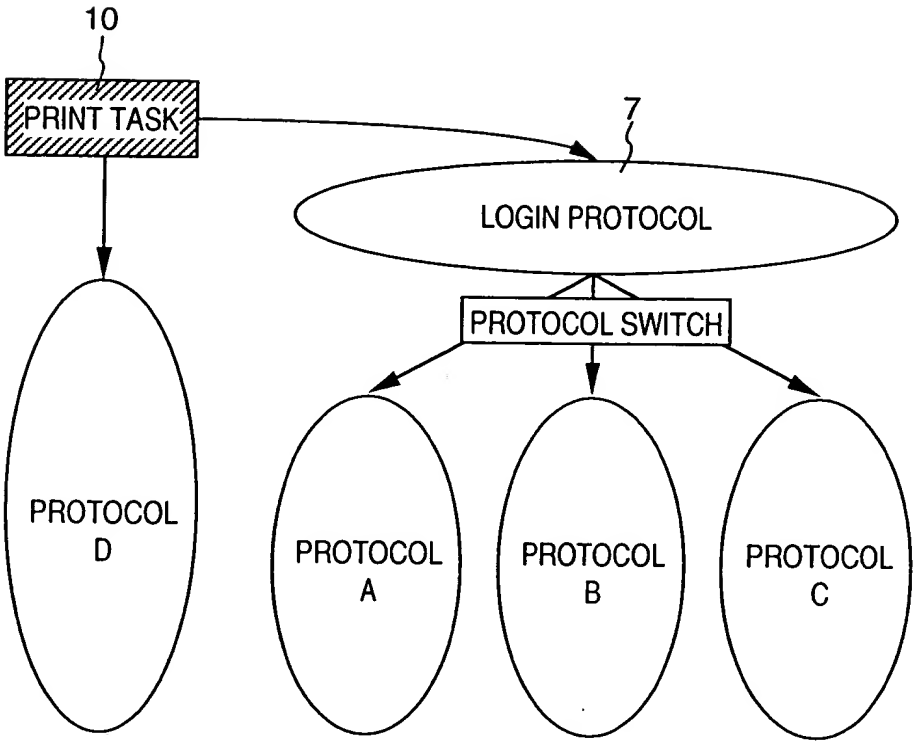

10
PRINT TASK
7
LOGIN PROTOCOL
PROTOCOL SWITCH
PROTOCOL D
PROTOCOL A
PROTOCOL B
PROTOCOL C

FIG. 25

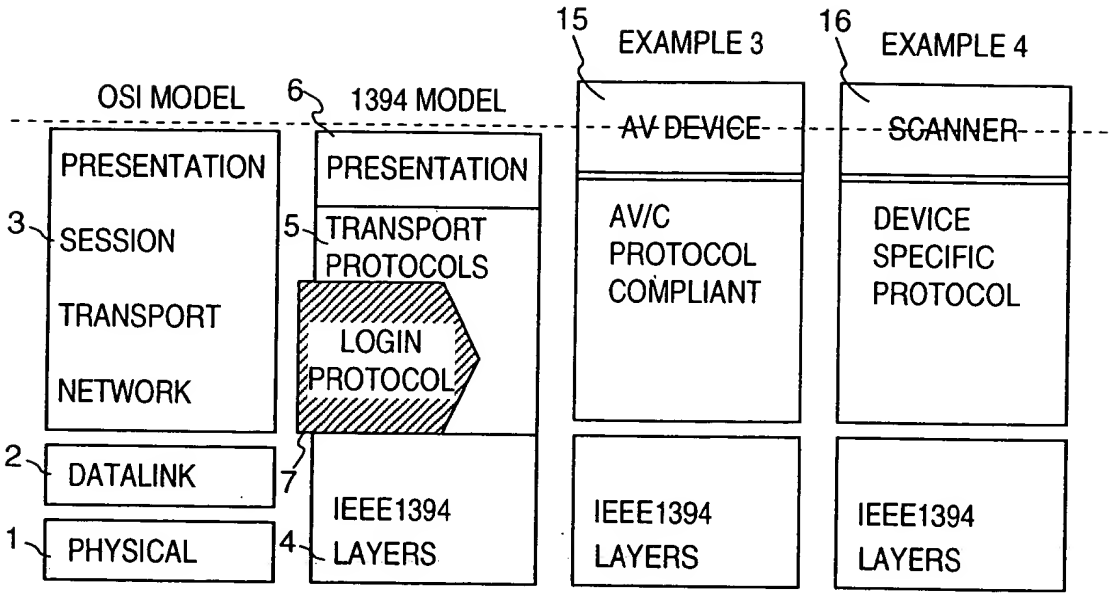

OSI MODEL
6
1394 MODEL
15
EXAMPLE 3
16
EXAMPLE 4
PRESENTATION
3
SESSION
TRANSPORT
NETWORK
2
DATALINK
1
PHYSICAL
PRESENTATION
5
TRANSPORT PROTOCOLS
LOGIN PROTOCOL
7
4
IEEE1394 LAYERS
AV DEVICE
AV/C PROTOCOL COMPLIANT
IEEE1394 LAYERS
SCANNER
DEVICE SPECIFIC PROTOCOL
IEEE1394 LAYERS

FIG. 26A

CSR CORE REGISTER

OFFSET (hexadecimal)	REGISTER NAME	FUNCTION
000	STATE_CLEAR	INFORMATION ON STATUS AND CONTROL
004	STATE_SET	INFORMATION ON WRITE ENABLE/DISABLE STATUS OF STATE_CLEAR
008	NODE_IDS	BUS ID + NODE ID
00C	RESET_START	TO RESET BUS BY WRITING INTO THIS AREA
010~014	INDIRECT_ADDRESS, INDIRECT_DATA	REGISTER TO ACCESS ROM AREA GREATER THAN 1KB
018~01C	SPLIT_TIMEOUT	TIMER VALUE TO DETECT TIME-OUT OF SPLIT TRANSACTION
020~02C	ARGUMENT, TEST_START, TEST_STATUS	REGISTER FOR DIAGNOSIS
030~04C	UNITS_BASE, UNITS_BOUND, MEMORY_BASE, MEMORY_BOUND	NOT INSTALLED IN IEEE 1394
050~054	INTERRUPT_TARGET, INTERRUPT_MASK	REGISTER OF INTERRUPTION NOTIFICATION
058~07C	CLOCK_VALUE, CLOCK_TICK_PERIOD, CLOCK_STOROBE_ARRIVED, CLOCK_INFO	NOT INSTALLED IN IEEE 1394
080~0FC	MESSAGE_REQUEST, MESSAGE_RESPONSE	REGISTER FOR MESSAGE NOTIFICATION
100~17C		RESERVATION
180~1FC	ERROR_LOG_BUFFER	TO RESERVE FOR IEEE 1394

FIG. 26B

SERIAL BUS REGISTER

OFFSET (hexadecimal)	REGISTER NAME	FUNCTION
200	CYCLE_TIME	COUNTER FOR ISOCHRONOUS TRANSFER
204	BUS_TIME	REGISTER FOR TIME SYNCHRONIZATION
208	POWER_FAIL_IMMINENT	REGISTER RELATING TO POWER SUPPLY
20C	POWER_SOURCE	
210	BUSY_TIMEOUT	TO CONTROL RETRY IN TRANSACTION LAYER
214~218		RESERVATION
21C	BUS_MANAGER_ID	NODE ID OF BUS MANAGER
220	BANDWIDTH_AVAILABLE	TO MANAGE ISOCHRONOUS TRANSFER BAND
224~228	CHANNELS_AVAILABLE	TO MANAGE CHANNEL NUMBER FOR ISOCHRONOUS TRANSFER
22C	MAINT_CONTROL	REGISTER FOR DIAGNOSIS
230	MAINT_UTILITY	
234~3FC		RESERVATION

F I G. 26C

SERIAL-BUS NODE RESOURCE REGISTER

OFFSET (hexadecimal)	REGISTER NAME	FUNCTION
800~FFC		RESERVATION
1000~13FC	TOPOLOGY-MAP	INFORMATION ON SERIAL BUS STRUCTURE
1400~1FFC		RESERVATION
2000~2FFC	SPEED-MAP	INFORMATION ON TRANSFER SPEED OF SERIAL BUS
3000~FFFC		RESERVATION

F I G. 26D

MINIMUM FORMAT CONFIGURATION ROM

01	VENDOR ID

FIG. 26E

GENERAL FORMAT CONFIGURATION ROM

LENGTH OF bus_info_block	LENGTH OF ROM	CRC
bus_info_block (ASCII CODE OF 1394 BUS AND INFORMATION ON WHETHER OR NOT NODE HAS CAPABILITIES OF ISOCHRONOUS RESOURCE MANAGEMENT, CYCLE MASTER, AND BUS MANAGEMENT)		
root_directory (INDICATE VENDOR ID AND NODE FUNCTION)		
unit_directories (INDICATE UNIT TYPE AND DRIVER SOFT VERSION)		
root & unit_leaves		
vendor_dependent_information		

FIG. 27A

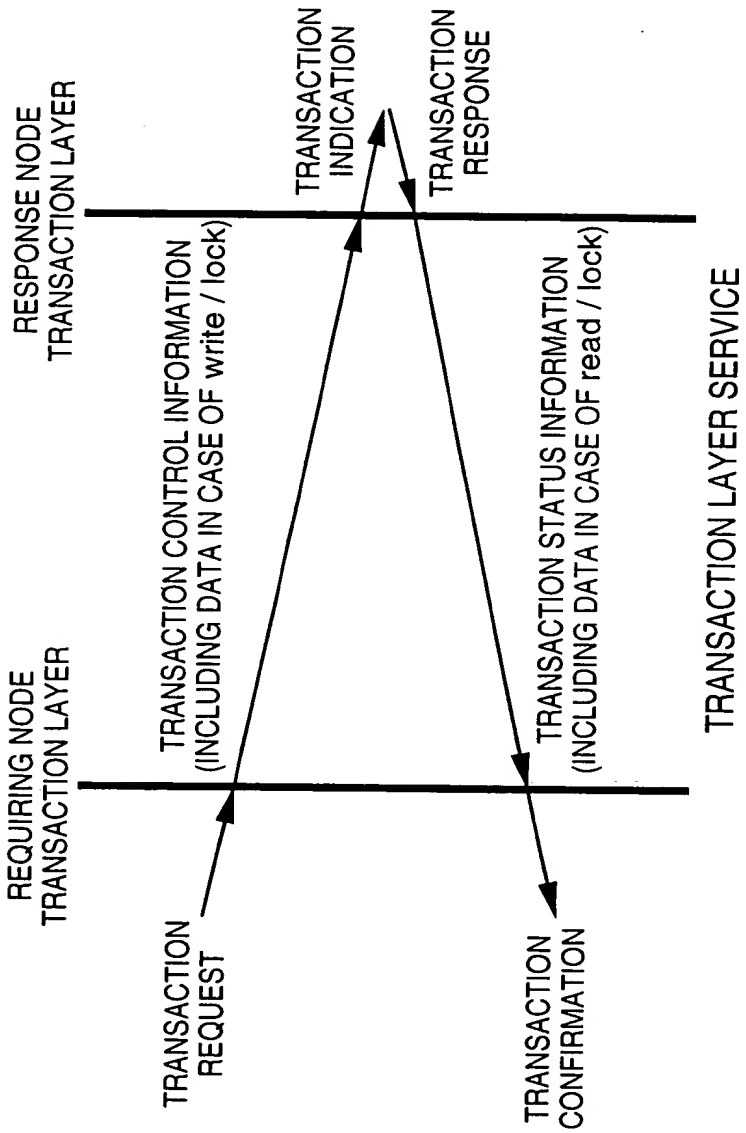

REQUIRING NODE TRANSACTION LAYER
RESPONSE NODE TRANSACTION LAYER
TRANSACTION LAYER SERVICE
TRANSACTION REQUEST
TRANSACTION CONTROL INFORMATION (INCLUDING DATA IN CASE OF write / lock)
TRANSACTION INDICATION
TRANSACTION RESPONSE
TRANSACTION STATUS INFORMATION (INCLUDING DATA IN CASE OF read / lock)
TRANSACTION CONFIRMATION

FIG. 27B

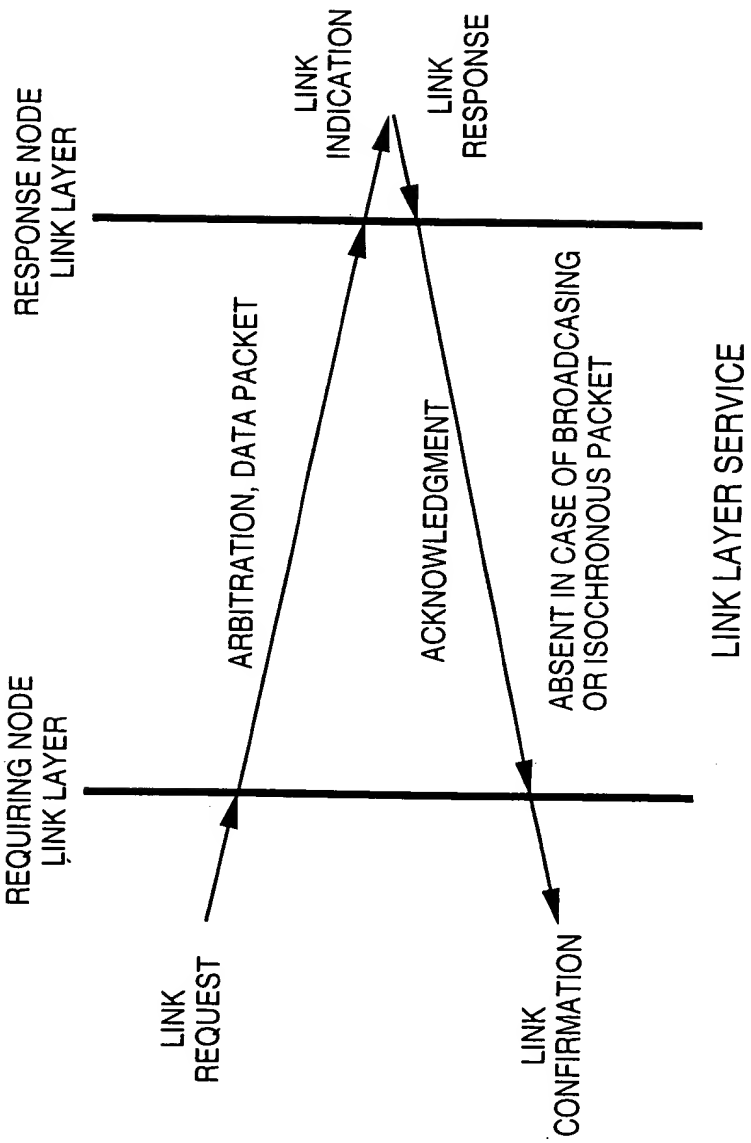

RESPONSE NODE LINK LAYER
REQUIRING NODE LINK LAYER
LINK INDICATION
LINK RESPONSE
ARBITRATION, DATA PACKET
ACKNOWLEDGMENT
ABSENT IN CASE OF BROADCASING OR ISOCHRONOUS PACKET
LINK REQUEST
LINK CONFIRMATION
LINK LAYER SERVICE

FIG. 28A

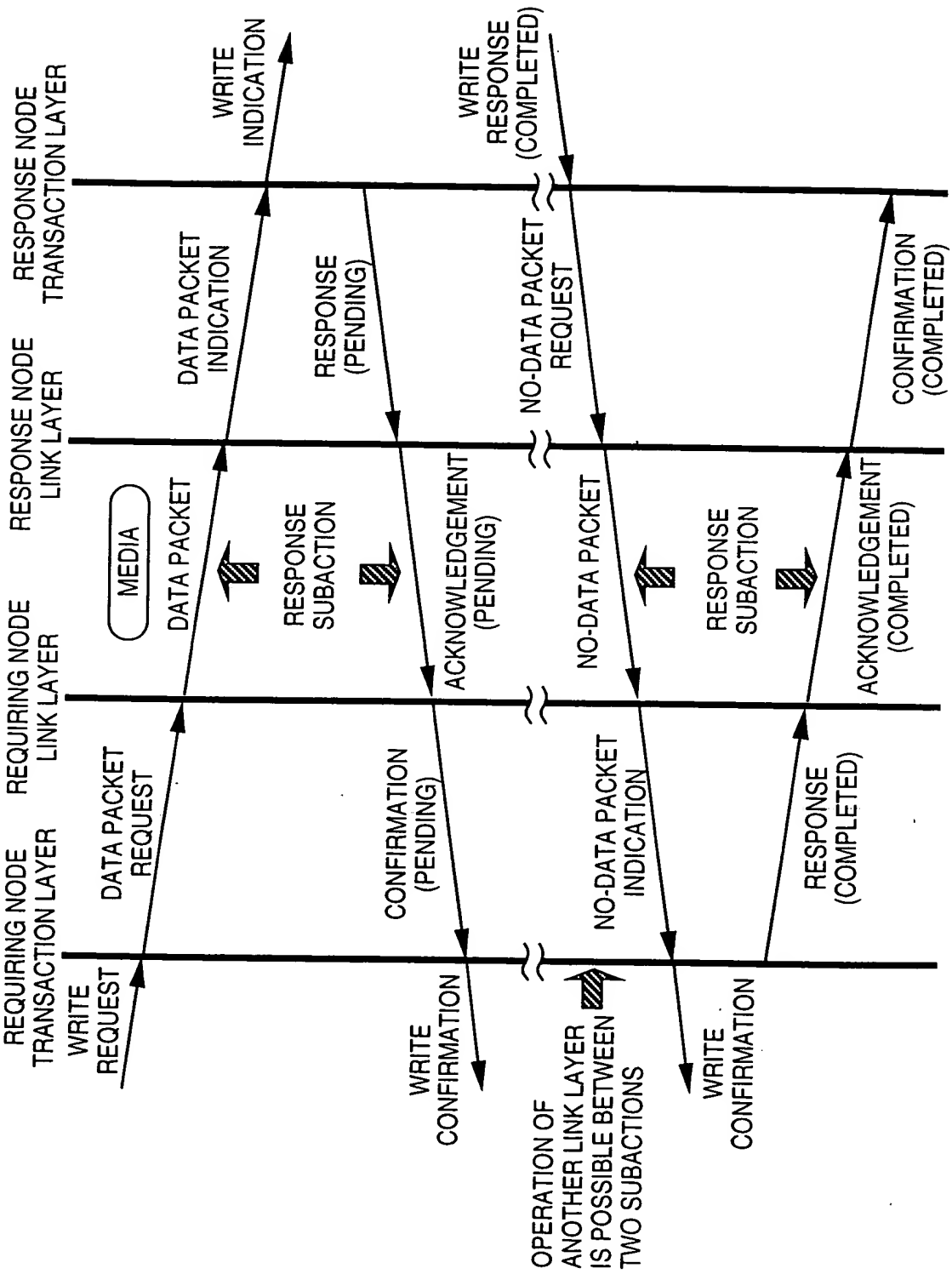

REQUIRING NODE TRANSACTION LAYER
REQUIRING NODE LINK LAYER
RESPONSE NODE LINK LAYER
RESPONSE NODE TRANSACTION LAYER
WRITE REQUEST
DATA PACKET REQUEST
MEDIA
DATA PACKET
RESPONSE SUBACTION
DATA PACKET INDICATION
WRITE INDICATION
RESPONSE (PENDING)
ACKNOWLEDGEMENT (PENDING)
CONFIRMATION (PENDING)
WRITE CONFIRMATION
OPERATION OF ANOTHER LINK LAYER IS POSSIBLE BETWEEN TWO SUBACTIONS
NO-DATA PACKET INDICATION
NO-DATA PACKET
RESPONSE SUBACTION
NO-DATA PACKET REQUEST
WRITE RESPONSE (COMPLETED)
RESPONSE (COMPLETED)
ACKNOWLEDGEMENT (COMPLETED)
CONFIRMATION (COMPLETED)
WRITE CONFIRMATION

FIG. 28B

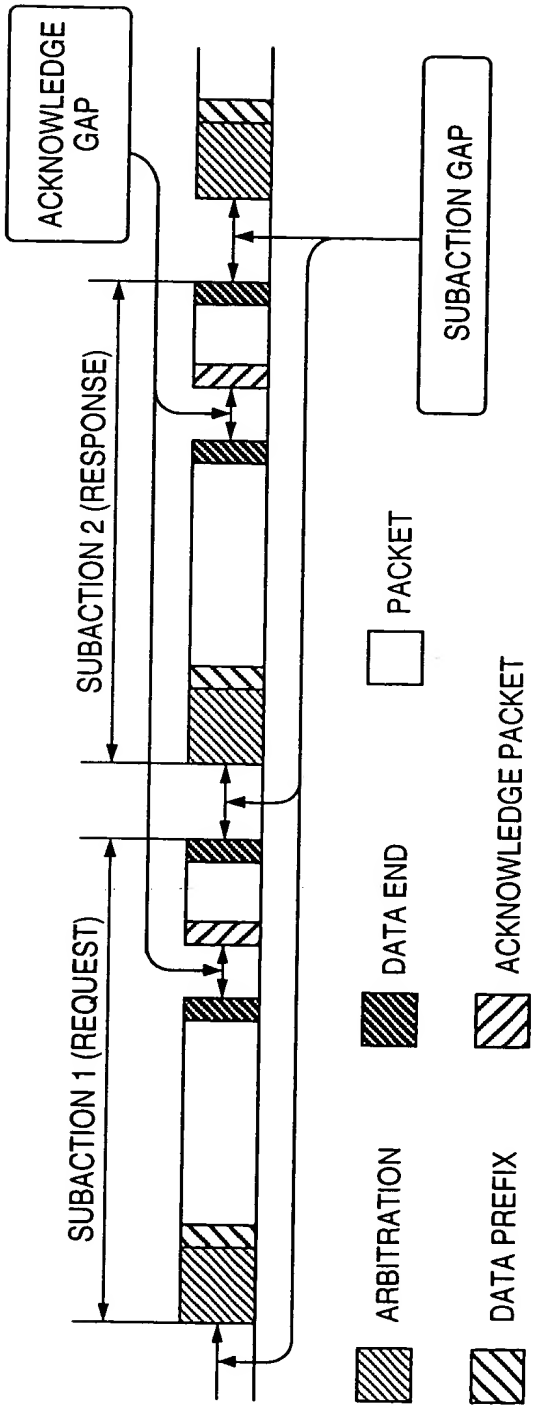

ACKNOWLEDGE GAP
SUBACTION GAP
SUBACTION 2 (RESPONSE)
SUBACTION 1 (REQUEST)
PACKET
DATA END
ACKNOWLEDGE PACKET
ARBITRATION
DATA PREFIX

FIG. 29

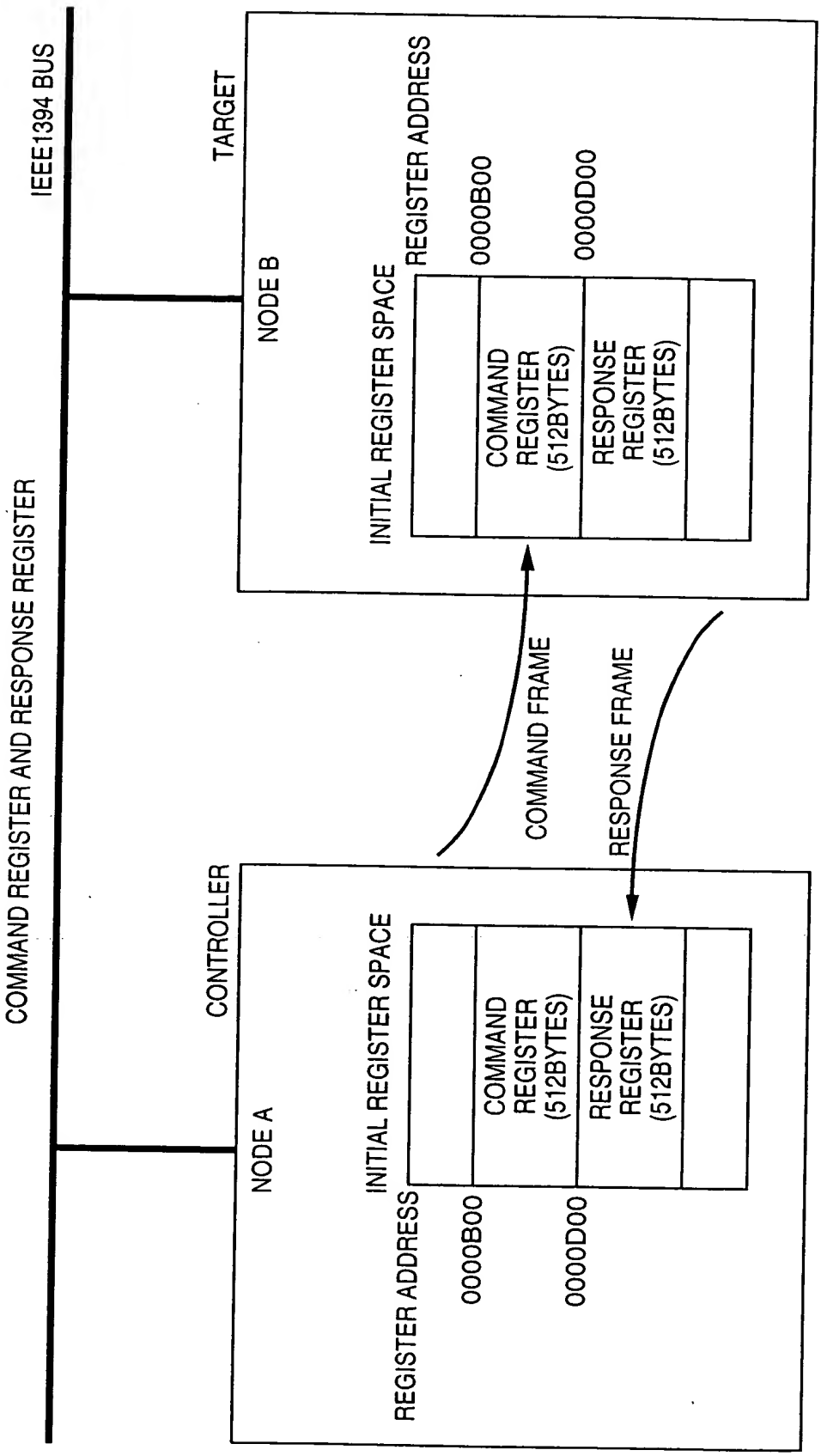

IEEE1394 BUS
COMMAND REGISTER AND RESPONSE REGISTER
TARGET
NODE B
INITIAL REGISTER SPACE
REGISTER ADDRESS
0000B00
0000D00
COMMAND REGISTER (512BYTES)
RESPONSE REGISTER (512BYTES)
COMMAND FRAME
RESPONSE FRAME
CONTROLLER
NODE A
INITIAL REGISTER SPACE
REGISTER ADDRESS
0000B00
0000D00
COMMAND REGISTER (512BYTES)
RESPONSE REGISTER (512BYTES)

FIG. 30

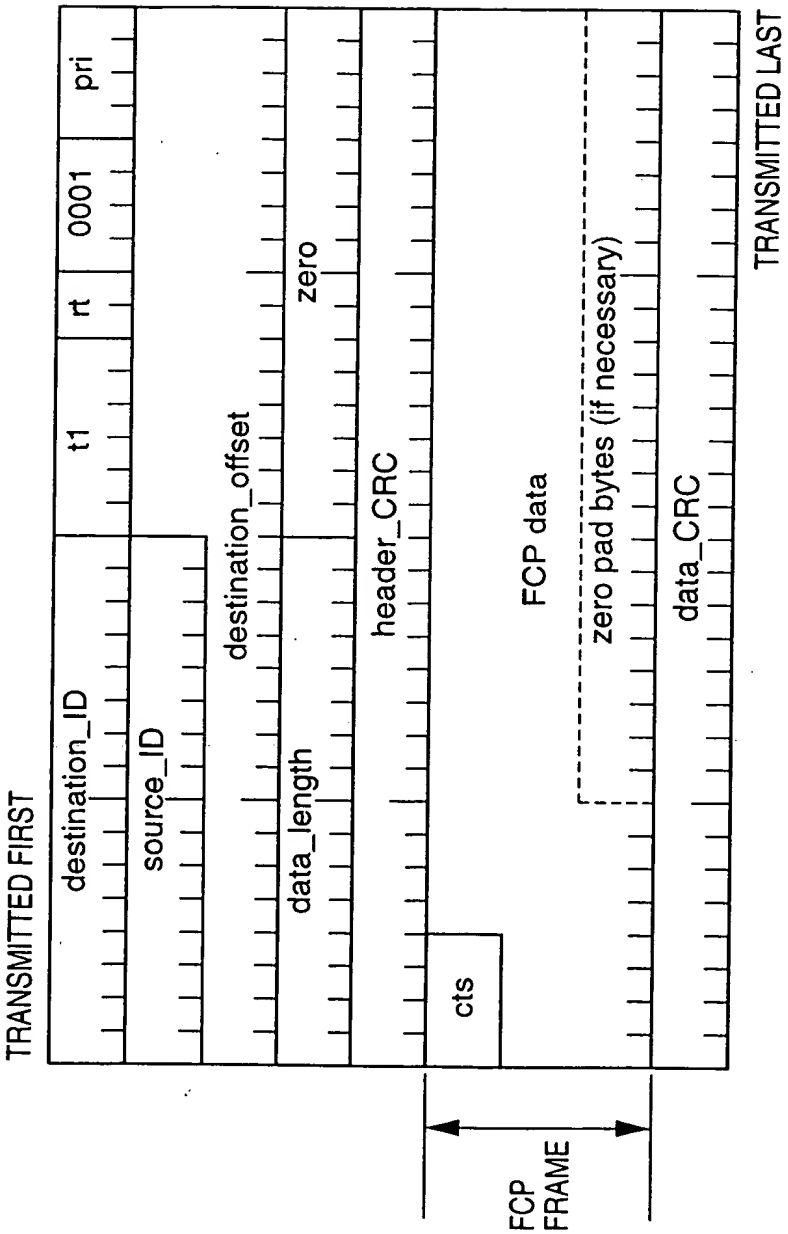

TRANSMITTED FIRST
destination_ID
t1
rt
0001
pri
source_ID
destination_offset
data_length
zero
header_CRC
cts
FCP data
zero pad bytes (if necessary)
data_CRC
TRANSMITTED LAST
FCP FRAME

FIG. 31

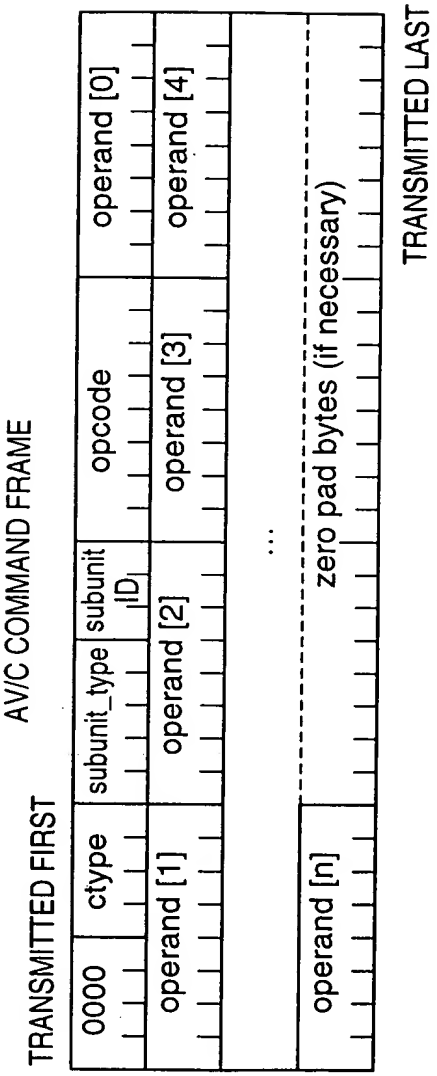

AV/C COMMAND FRAME
TRANSMITTED FIRST
0000
ctype
subunit_type
subunit ID
opcode
operand [0]
operand [1]
operand [2]
operand [3]
operand [4]
...
operand [n]
zero pad bytes (if necessary)
TRANSMITTED LAST

FIG. 32

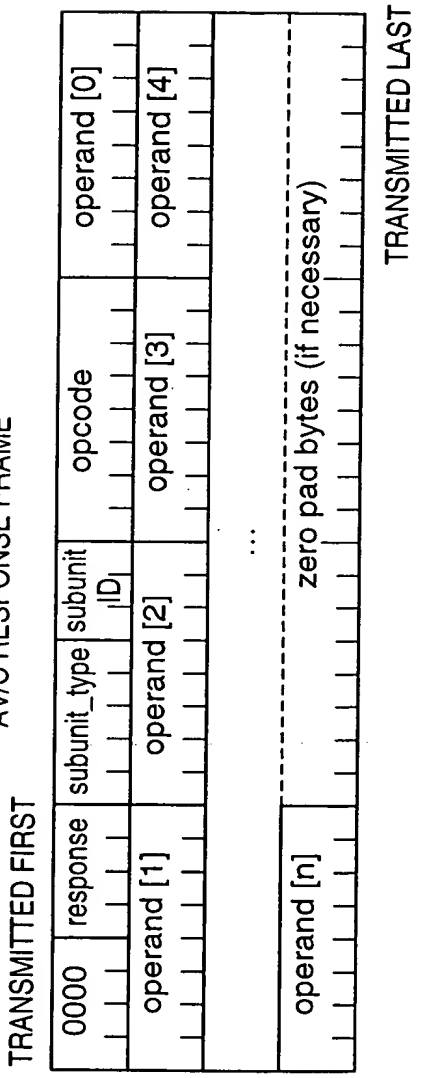

AV/C RESPONSE FRAME
TRANSMITTED FIRST
0000
response
subunit_type
subunit ID
opcode
operand [0]
operand [1]
operand [2]
operand [3]
operand [4]
...
operand [n]
zero pad bytes (if necessary)
TRANSMITTED LAST

FIG. 33

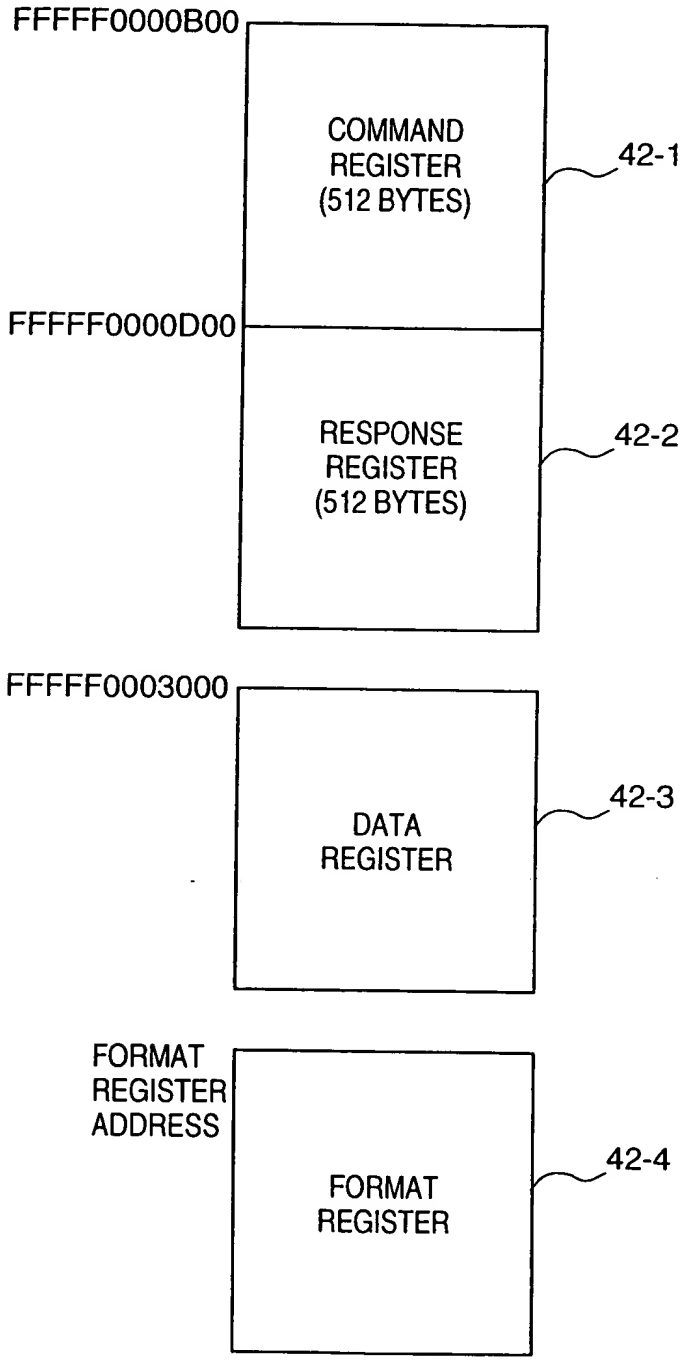

FFFFF0000B00
COMMAND REGISTER (512 BYTES)
42-1
FFFFF0000D00
RESPONSE REGISTER (512 BYTES)
42-2
FFFFF0003000
DATA REGISTER
42-3
FORMAT REGISTER ADDRESS
FORMAT REGISTER
42-4

FIG. 34

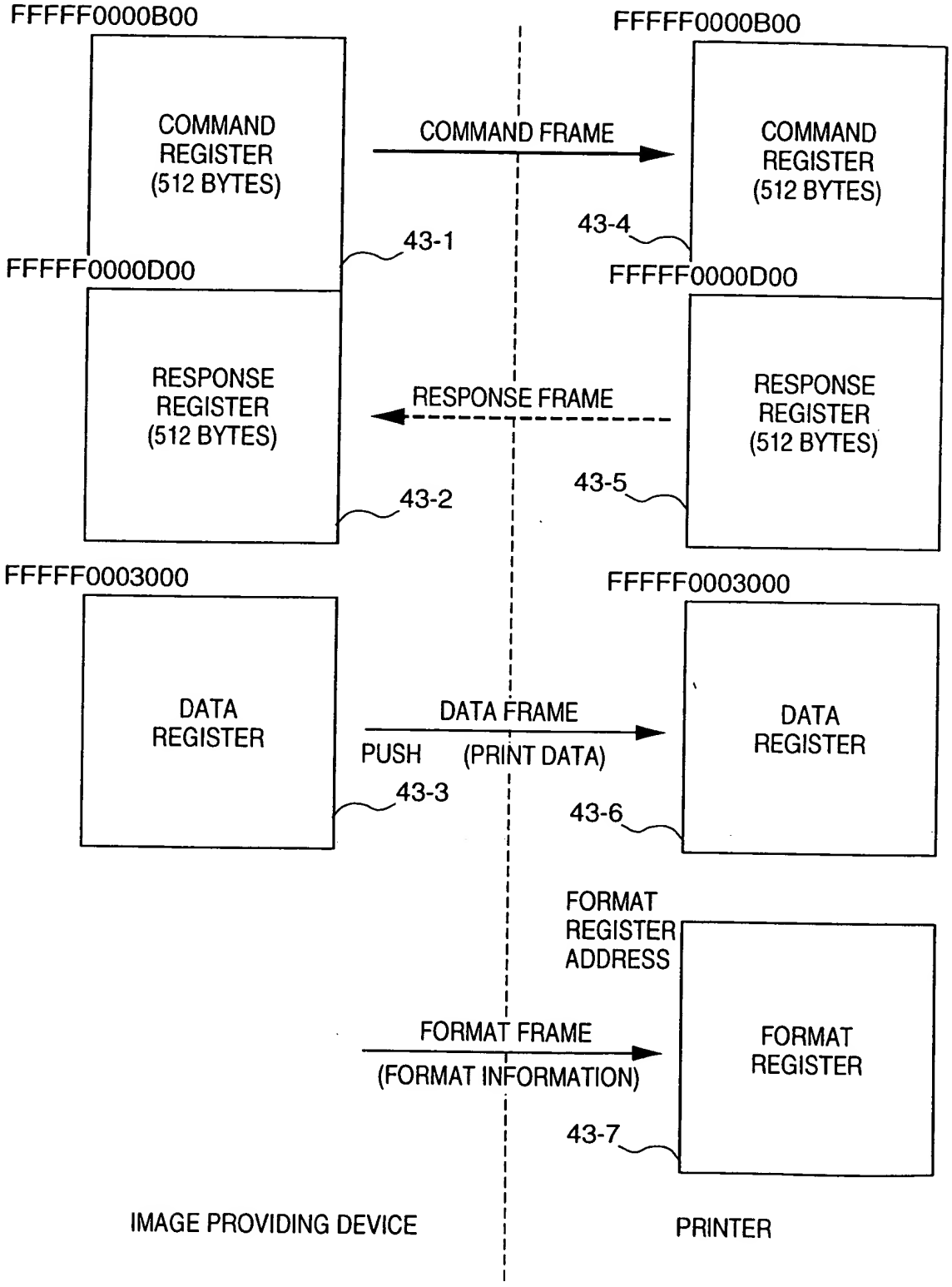

FFFFF0000B00
COMMAND REGISTER (512 BYTES)
43-1
FFFFF0000D00
RESPONSE REGISTER (512 BYTES)
43-2
FFFFF0003000
DATA REGISTER
43-3
COMMAND FRAME
RESPONSE FRAME
DATA FRAME
PUSH (PRINT DATA)
FORMAT REGISTER ADDRESS
FORMAT FRAME
(FORMAT INFORMATION)
IMAGE PROVIDING DEVICE
FFFFF0000B00
COMMAND REGISTER (512 BYTES)
43-4
FFFFF0000D00
RESPONSE REGISTER (512 BYTES)
43-5
FFFFF0003000
DATA REGISTER
43-6
FORMAT REGISTER
43-7
PRINTER

FIG. 35

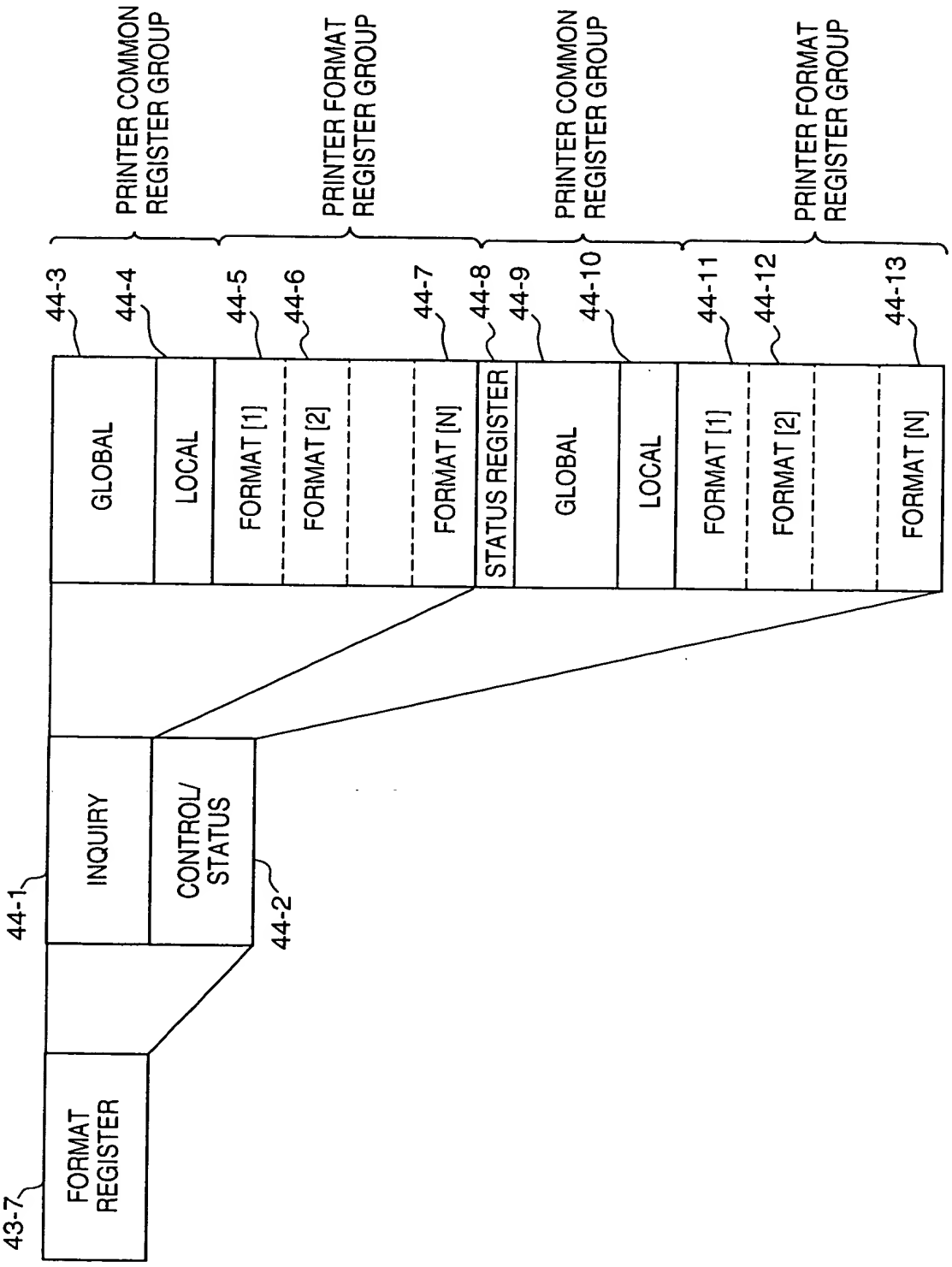

PRINTER COMMON REGISTER GROUP
PRINTER FORMAT REGISTER GROUP
PRINTER COMMON REGISTER GROUP
PRINTER FORMAT REGISTER GROUP
44-3
44-4
44-5
44-6
44-7
44-8
44-9
44-10
44-11
44-12
44-13
GLOBAL
LOCAL
FORMAT [1]
FORMAT [2]
FORMAT [N]
STATUS REGISTER
GLOBAL
LOCAL
FORMAT [1]
FORMAT [2]
FORMAT [N]
44-1
INQUIRY
CONTROL/ STATUS
44-2
43-7
FORMAT REGISTER

FIG. 36

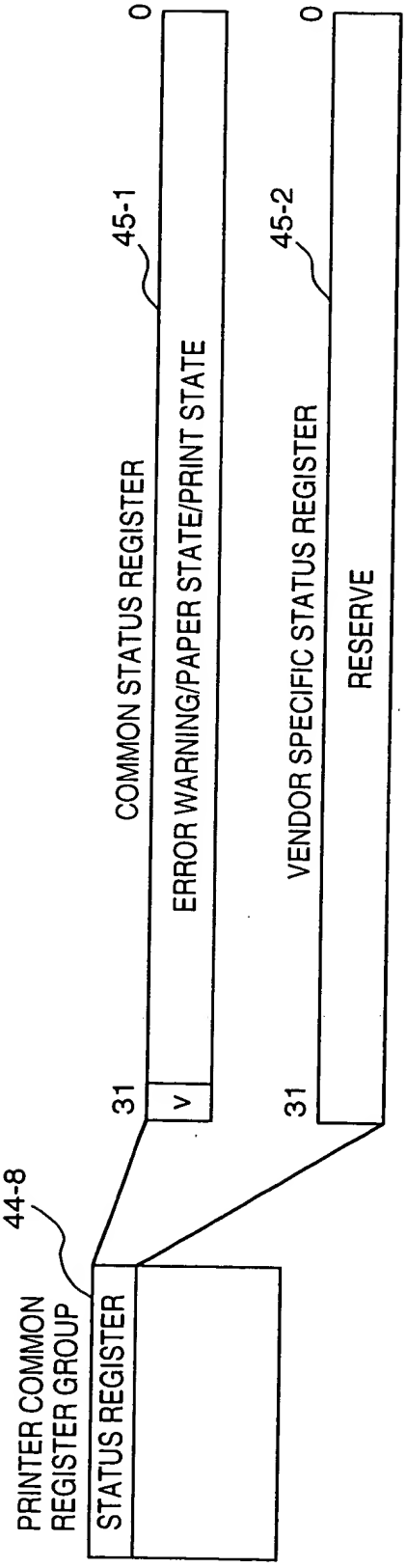

PRINTER COMMON REGISTER GROUP
44-8
STATUS REGISTER
COMMON STATUS REGISTER
45-1
31
0
V
ERROR WARNING/PAPER STATE/PRINT STATE
VENDOR SPECIFIC STATUS REGISTER
45-2
31
0
RESERVE

FIG. 37

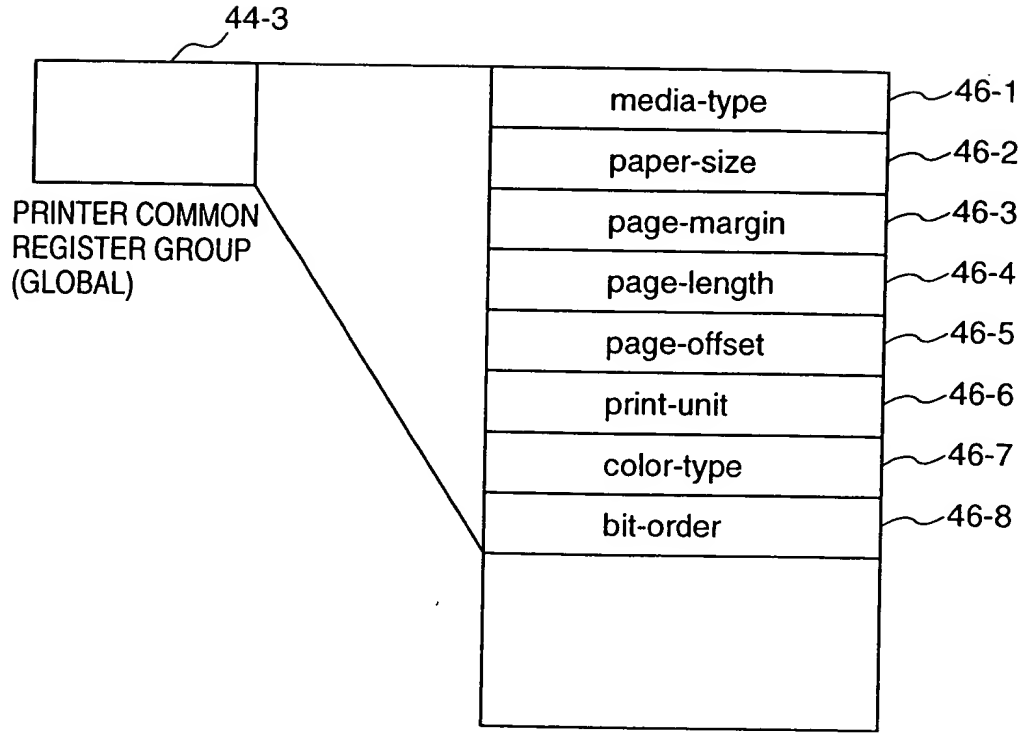

44-3
PRINTER COMMON REGISTER GROUP (GLOBAL)
media-type
paper-size
page-margin
page-length
page-offset
print-unit
color-type
bit-order
46-1
46-2
46-3
46-4
46-5
46-6
46-7
46-8

FIG. 38

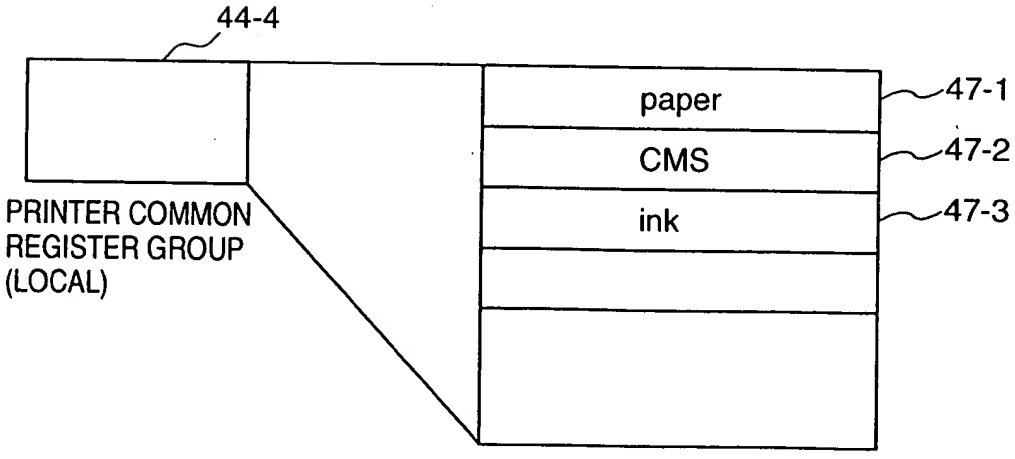

44-4
PRINTER COMMON REGISTER GROUP (LOCAL)
paper
CMS
ink
47-1
47-2
47-3

FIG. 39

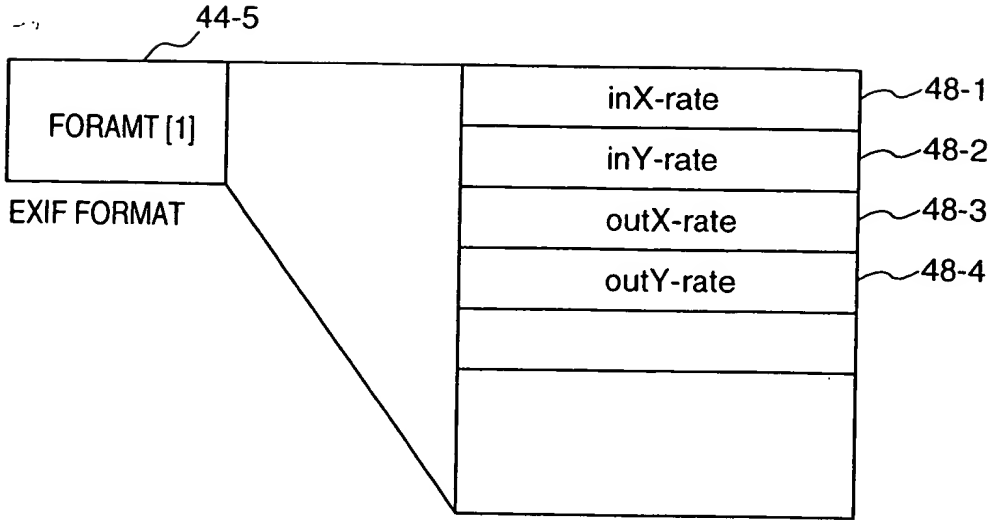

44-5
FORAMT [1]
EXIF FORMAT
inX-rate
inY-rate
outX-rate
outY-rate
48-1
48-2
48-3
48-4

FIG. 40

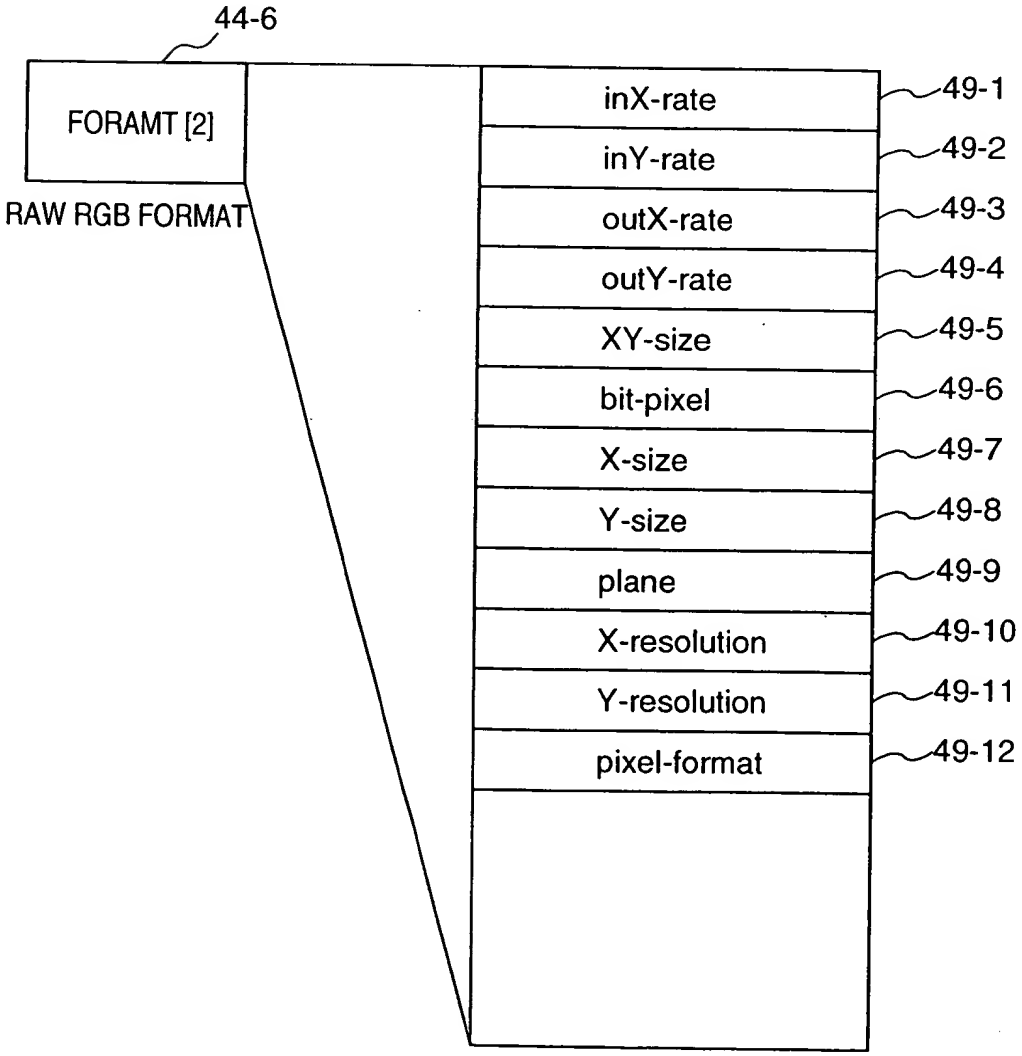

44-6
FORAMT [2]
RAW RGB FORMAT
inX-rate
inY-rate
outX-rate
outY-rate
XY-size
bit-pixel
X-size
Y-size
plane
X-resolution
Y-resolution
pixel-format
49-1
49-2
49-3
49-4
49-5
49-6
49-7
49-8
49-9
49-10
49-11
49-12

FIG. 41

COMMAND CLASSIFICATION	COMMAND	RESPONSE	
STATUS	GetStatus	GetStatusResponse	50-1
CONTROL	PrintReset	Print ResetResponse	50-2
	PrintStart	PrintStartResponse	50-3
	PrintStop	PrintStopResponse	50-4
	InsertPaper	InsertPaperResponse	50-5
	EjectPaper	EjectPaperResponse	50-6
	CopyStart	CopyStartResponse	50-7
	CopyEnd	CopyEndResponse	50-8
BLOCK / BUFFER	BlockSize	BlockSizeResponse	50-9
	BlockAddress	BlockAddressResponse	50-10
	FreeBlock	FreeBlockResponse	50-11
	WriteBlocks	WriteBlocksResponse	50-12
	BufferConfig	BufferConfigResponse	50-13
	SetBuffer	SetBufferResponse	50-14
CHANNEL	OpenChannel	OpenChannelResponse	50-15
	CloseChannel	CloseChannelResponse	50-16
TRANSFER	TransferMethod	TransferMethodResponse	50-17
FORMAT	SetFormat	SetFormatResponse	50-18
LOG-IN	Login	LoginResponse	50-19
	Logout	LogoutResponse	50-20
	Reconnect	ReconnectResponse	50-21
DATA	WriteBlock		50-22
	WriteBuffer		50-23
	PullBuffer		50-24

FIG. 42

EXIF(TIFF, JPEG)	EXIF NON-COMPRESSED AND COMPRESSED DATA
TIFF/EP	TIFF EXTENDED VERSION
RGB	RGB RAW IMAGE
YUV	YUV RAW IMAGE
YCrCb	YCrCb RAW IMAGE
CMYK	CMYK RAW IMAGE
Vendor Specific	VENDOR DEFINITION

FIG. 43

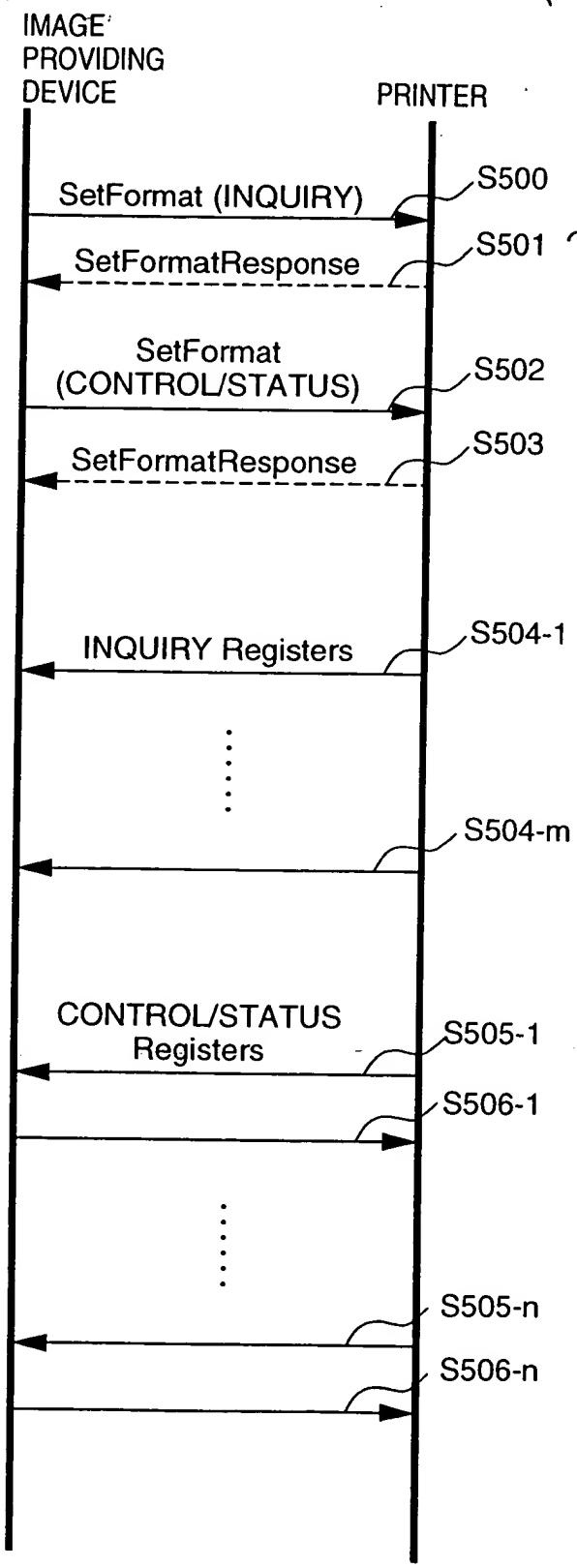


IMAGE PROVIDING DEVICE
PRINTER
SetFormat (INQUIRY)
S500
SetFormatResponse
S501
SetFormat (CONTROL/STATUS)
S502
SetFormatResponse
S503
INQUIRY Registers
S504-1
S504-m
CONTROL/STATUS Registers
S505-1
S506-1
S505-n
S506-n

FIG. 44

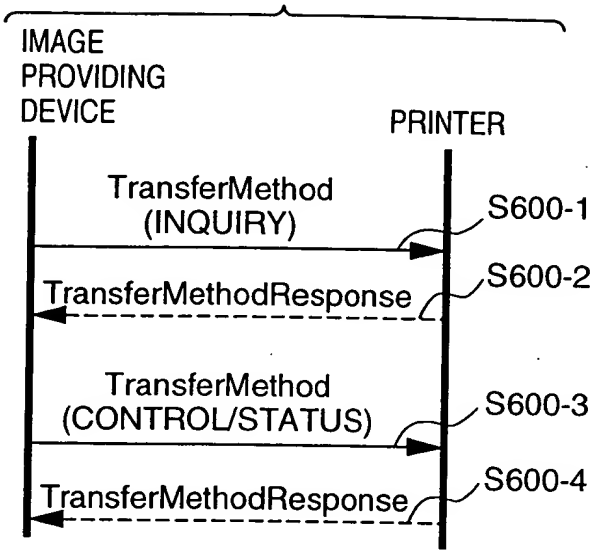


IMAGE PROVIDING DEVICE
PRINTER
TransferMethod (INQUIRY)
S600-1
TransferMethodResponse
S600-2
TransferMethod (CONTROL/STATUS)
S600-3
TransferMethodResponse
S600-4

FIG. 45

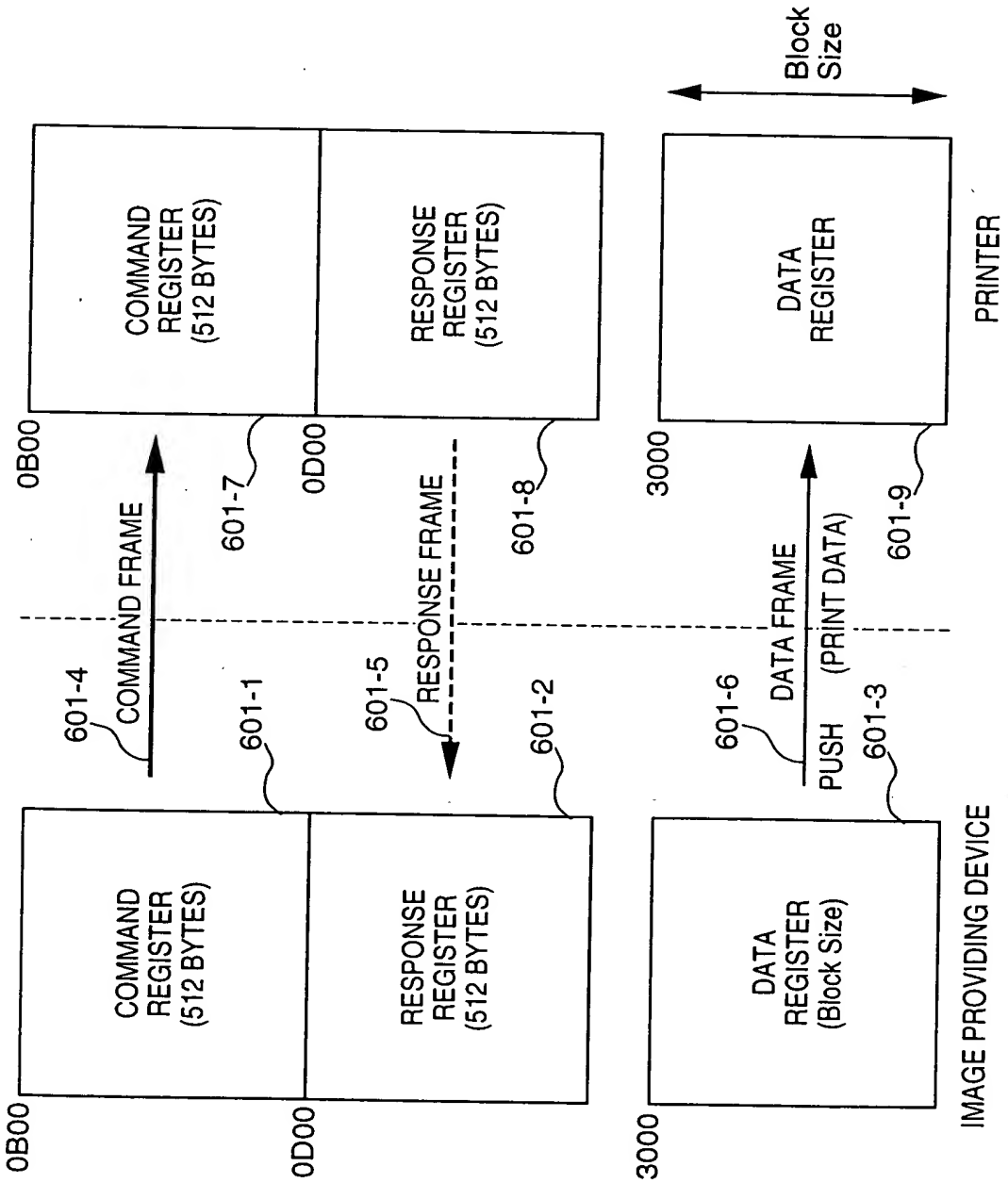


IMAGE PROVIDING DEVICE
PRINTER
COMMAND REGISTER (512 BYTES)
RESPONSE REGISTER (512 BYTES)
DATA REGISTER (Block Size)
DATA REGISTER
Block Size
0B00
0D00
3000
3000
601-1
601-2
601-3
601-4
601-5
601-6
601-7
601-8
601-9
COMMAND FRAME
RESPONSE FRAME
DATA FRAME
PUSH (PRINT DATA)

FIG. 46

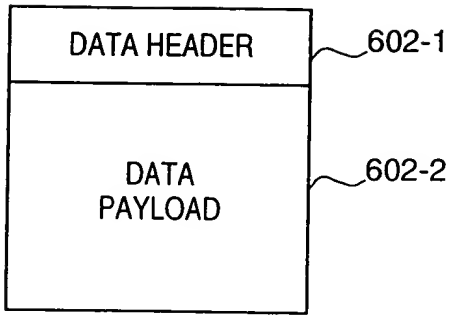

DATA HEADER
602-1
DATA
PAYLOAD
602-2

FIG. 47

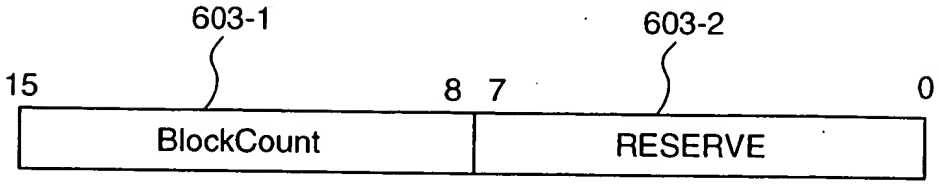

603-1
603-2
15
8
7
0
BlockCount
RESERVE

FIG. 48

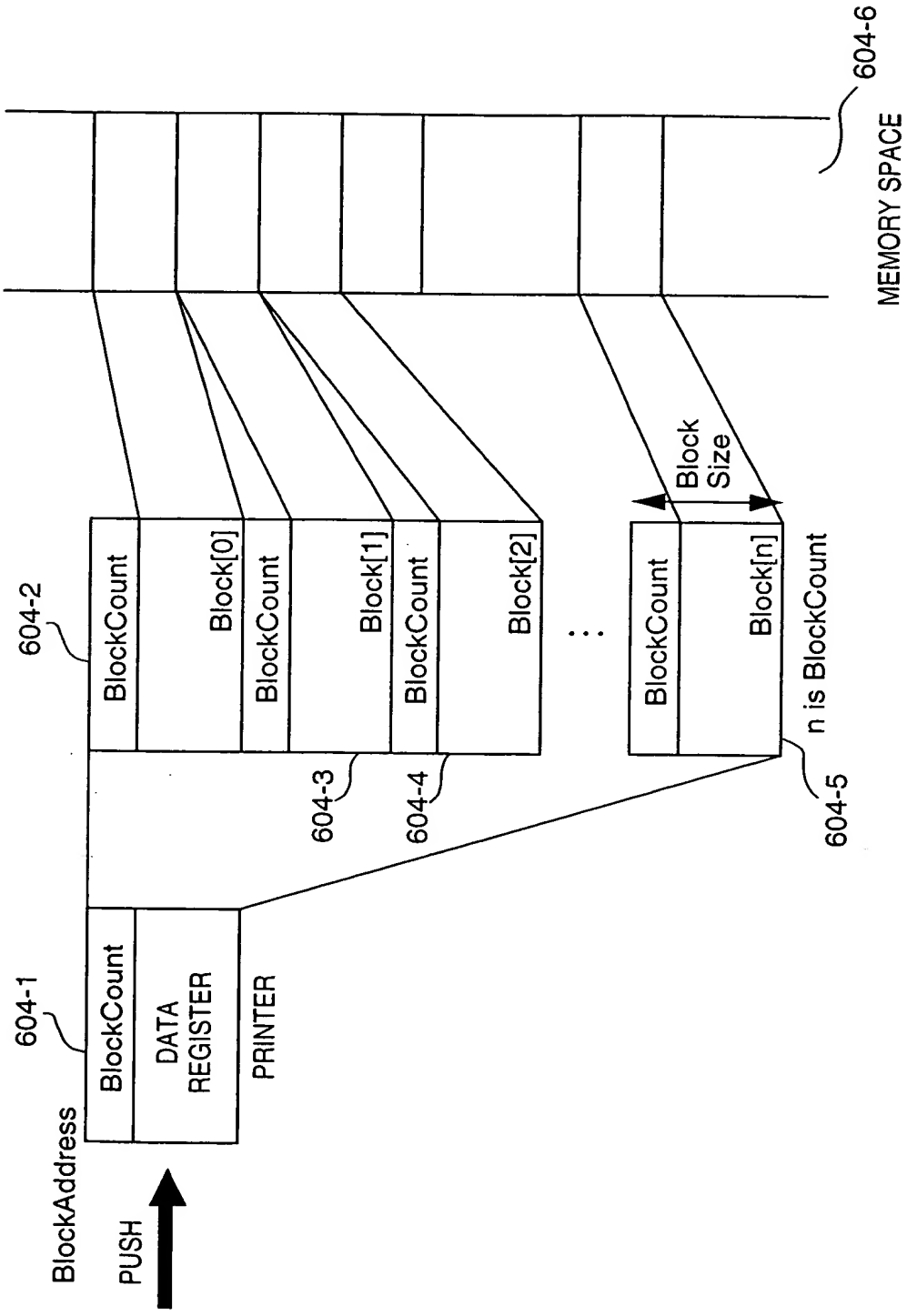

604-6
MEMORY SPACE
604-2
BlockCount
Block[0]
BlockCount
Block[1]
BlockCount
Block[2]
BlockCount
Block[n]
Block Size
n is BlockCount
604-3
604-4
604-5
604-1
BlockCount
DATA REGISTER
PRINTER
BlockAddress
PUSH

FIG. 49

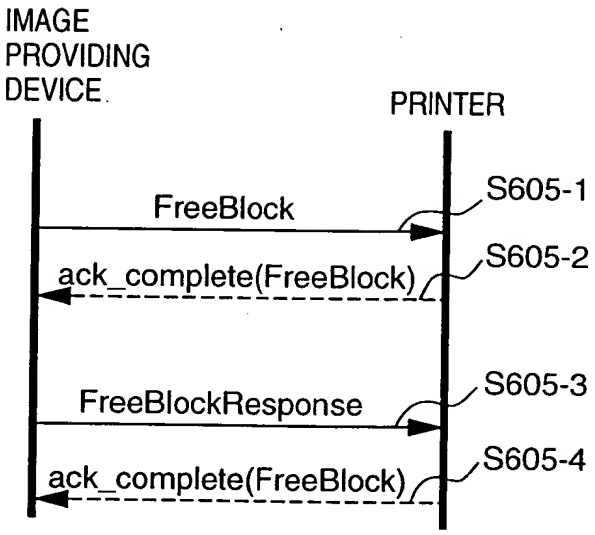


IMAGE
PROVIDING
DEVICE
PRINTER
FreeBlock
S605-1
ack_complete(FreeBlock)
S605-2
FreeBlockResponse
S605-3
ack_complete(FreeBlock)
S605-4

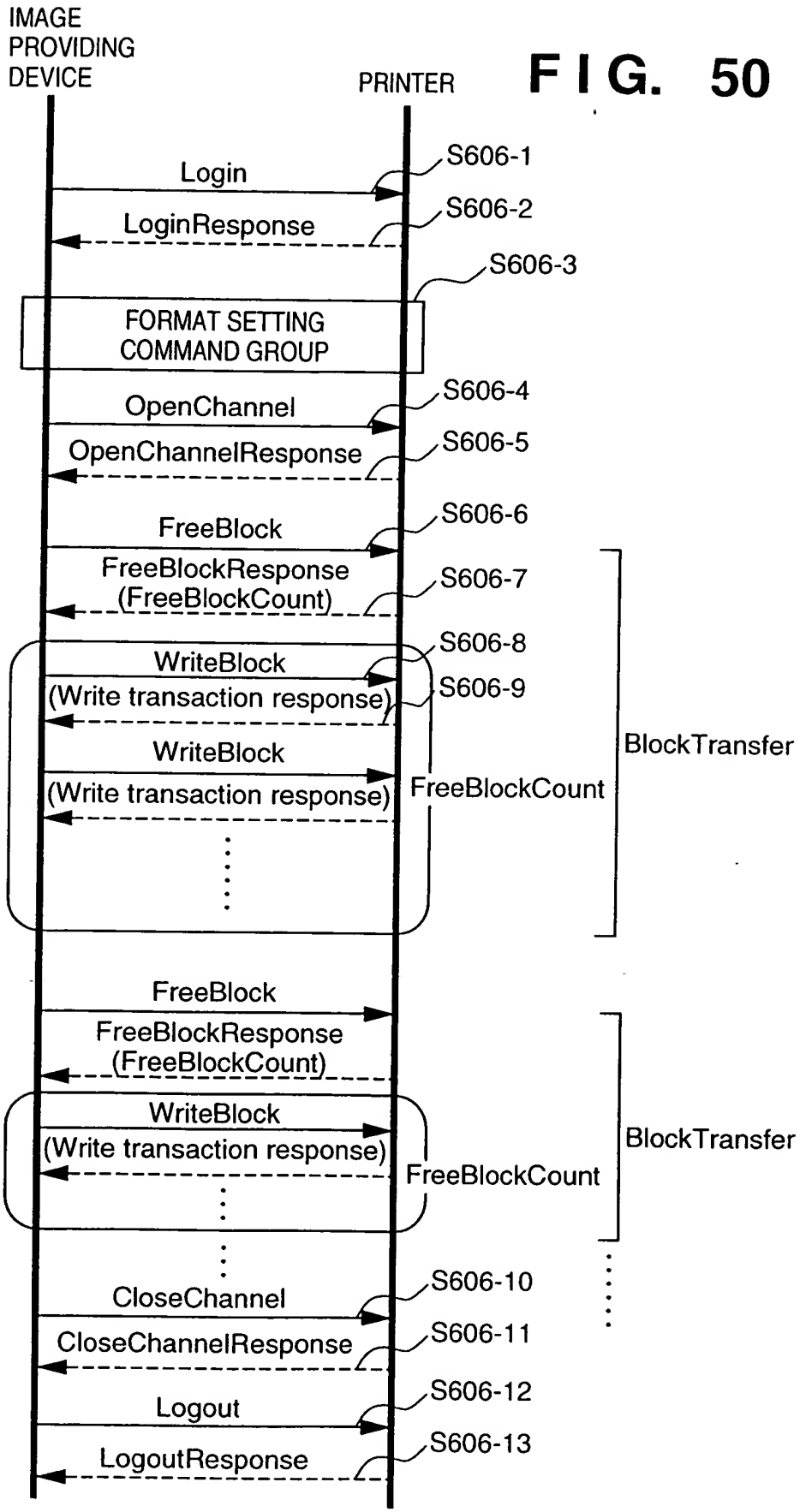


IMAGE PROVIDING DEVICE
PRINTER
Login
S606-1
LoginResponse
S606-2
S606-3
FORMAT SETTING COMMAND GROUP
OpenChannel
S606-4
OpenChannelResponse
S606-5
FreeBlock
S606-6
FreeBlockResponse (FreeBlockCount)
S606-7
WriteBlock
S606-8
(Write transaction response)
S606-9
WriteBlock
(Write transaction response)
FreeBlockCount
BlockTransfer
FreeBlock
FreeBlockResponse (FreeBlockCount)
WriteBlock
(Write transaction response)
FreeBlockCount
BlockTransfer
CloseChannel
S606-10
CloseChannelResponse
S606-11
Logout
S606-12
LogoutResponse
S606-13

FIG. 50

FIG. 51

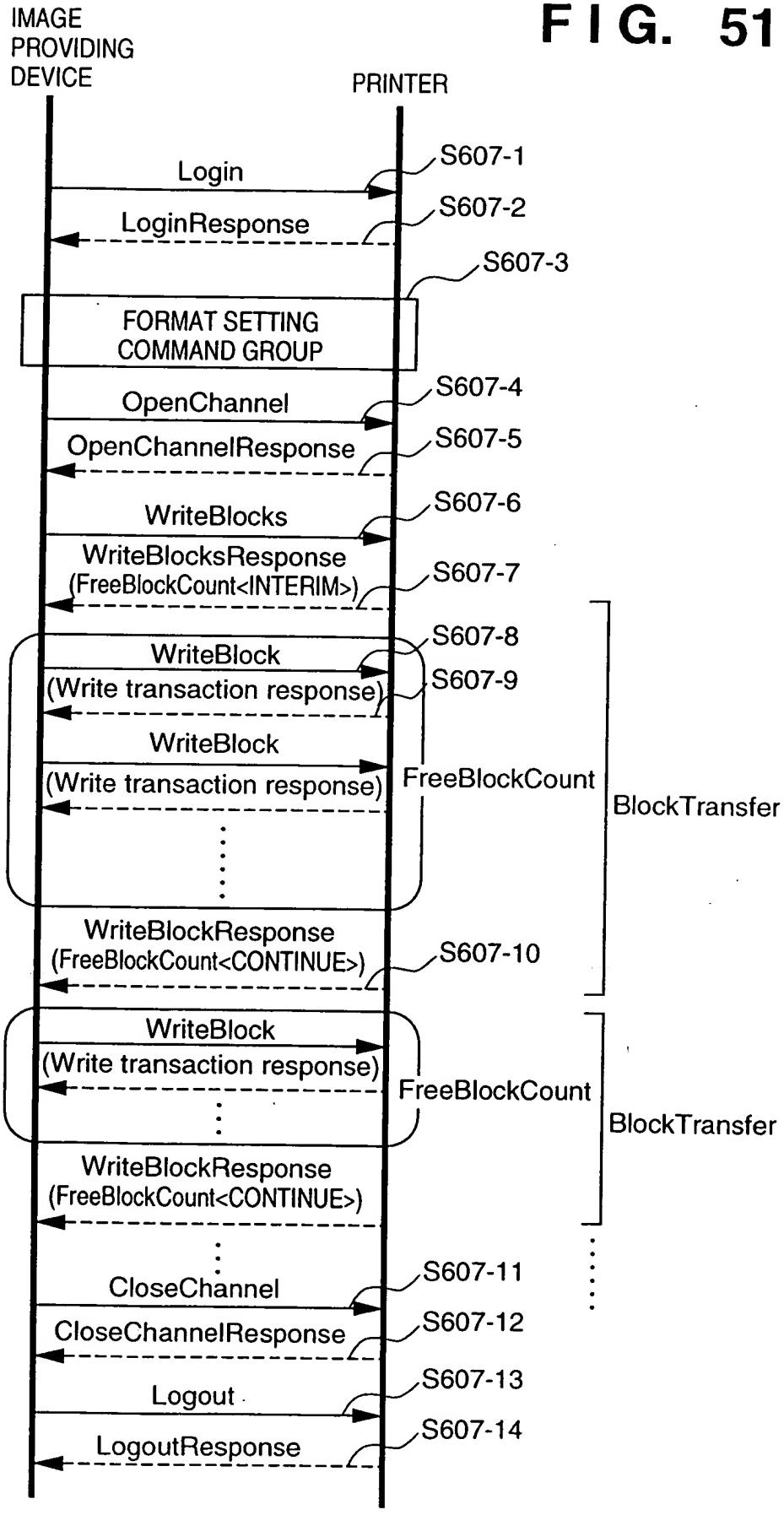


IMAGE PROVIDING DEVICE
PRINTER
Login
S607-1
LoginResponse
S607-2
S607-3
FORMAT SETTING COMMAND GROUP
OpenChannel
S607-4
OpenChannelResponse
S607-5
WriteBlocks
S607-6
WriteBlocksResponse (FreeBlockCount<INTERIM>)
S607-7
WriteBlock
S607-8
(Write transaction response)
S607-9
WriteBlock
(Write transaction response)
FreeBlockCount
BlockTransfer
WriteBlockResponse (FreeBlockCount<CONTINUE>)
S607-10
WriteBlock
(Write transaction response)
FreeBlockCount
BlockTransfer
WriteBlockResponse (FreeBlockCount<CONTINUE>)
CloseChannel
S607-11
CloseChannelResponse
S607-12
Logout
S607-13
LogoutResponse
S607-14

FIG. 52

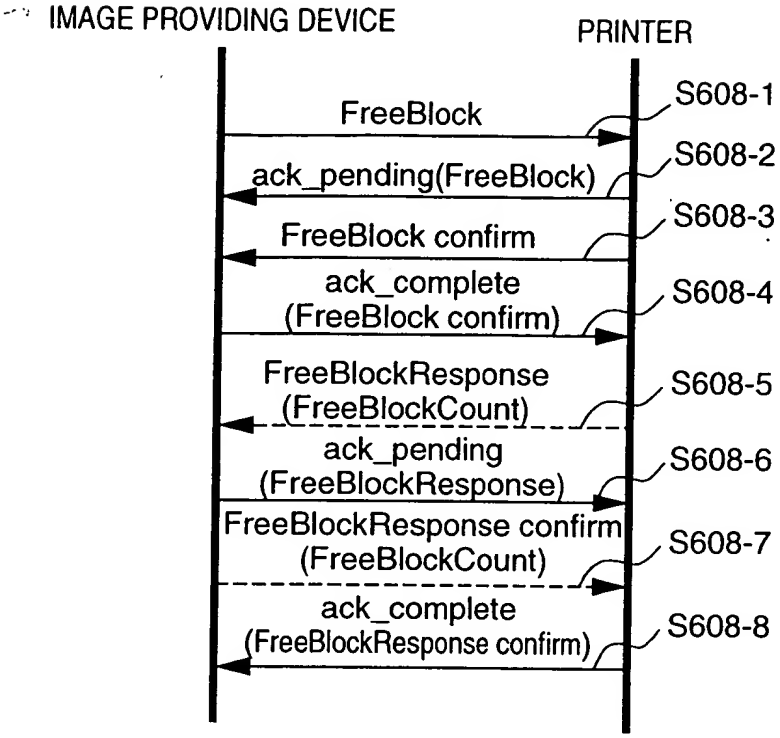


FIG. 53

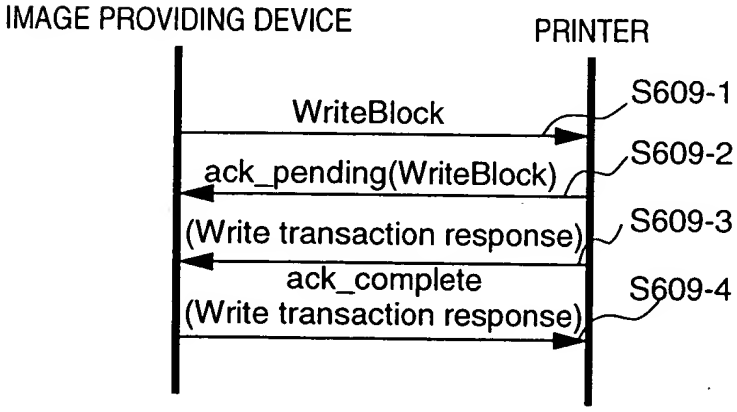


FIG. 54

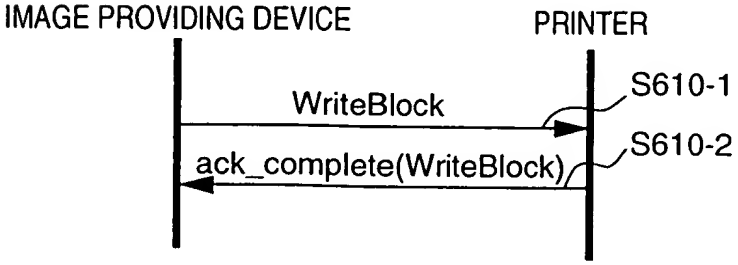


FIG. 55

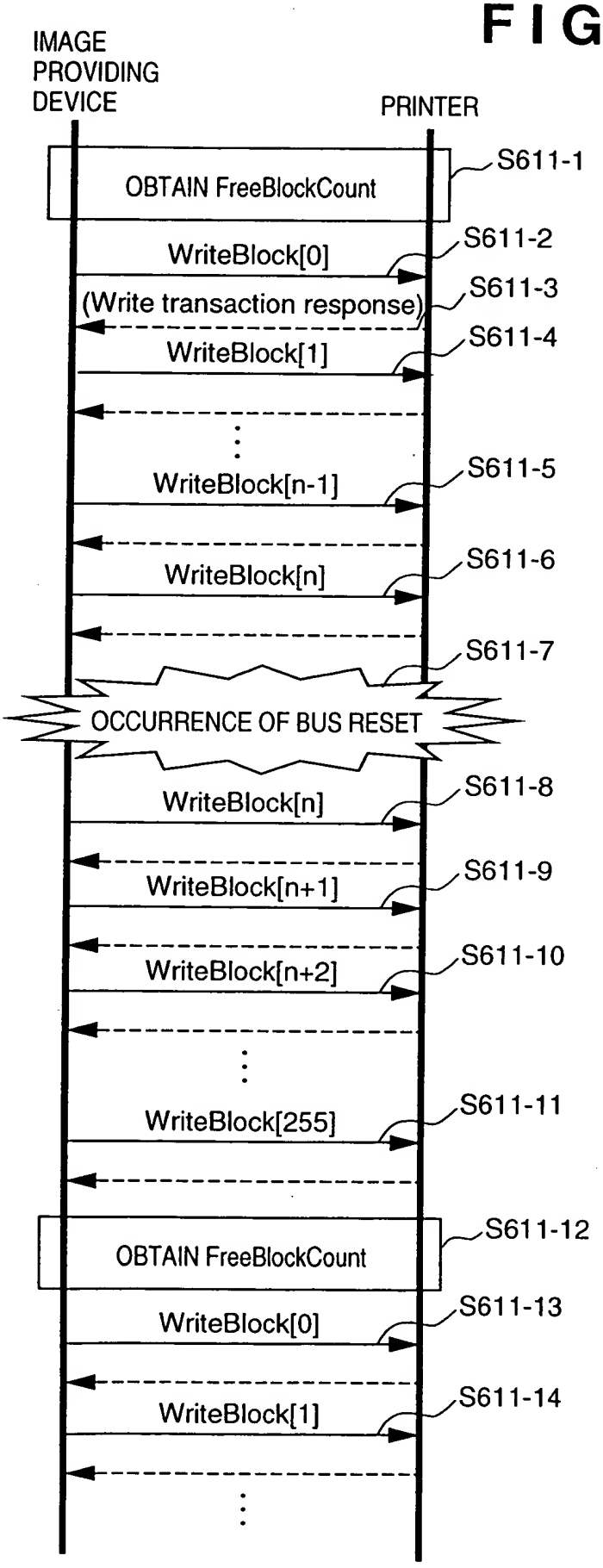


IMAGE PROVIDING DEVICE
PRINTER
OBTAIN FreeBlockCount
S611-1
WriteBlock[0]
S611-2
(Write transaction response)
S611-3
WriteBlock[1]
S611-4
WriteBlock[n-1]
S611-5
WriteBlock[n]
S611-6
S611-7
OCCURRENCE OF BUS RESET
WriteBlock[n]
S611-8
WriteBlock[n+1]
S611-9
WriteBlock[n+2]
S611-10
WriteBlock[255]
S611-11
OBTAIN FreeBlockCount
S611-12
WriteBlock[0]
S611-13
WriteBlock[1]
S611-14

FIG. 56

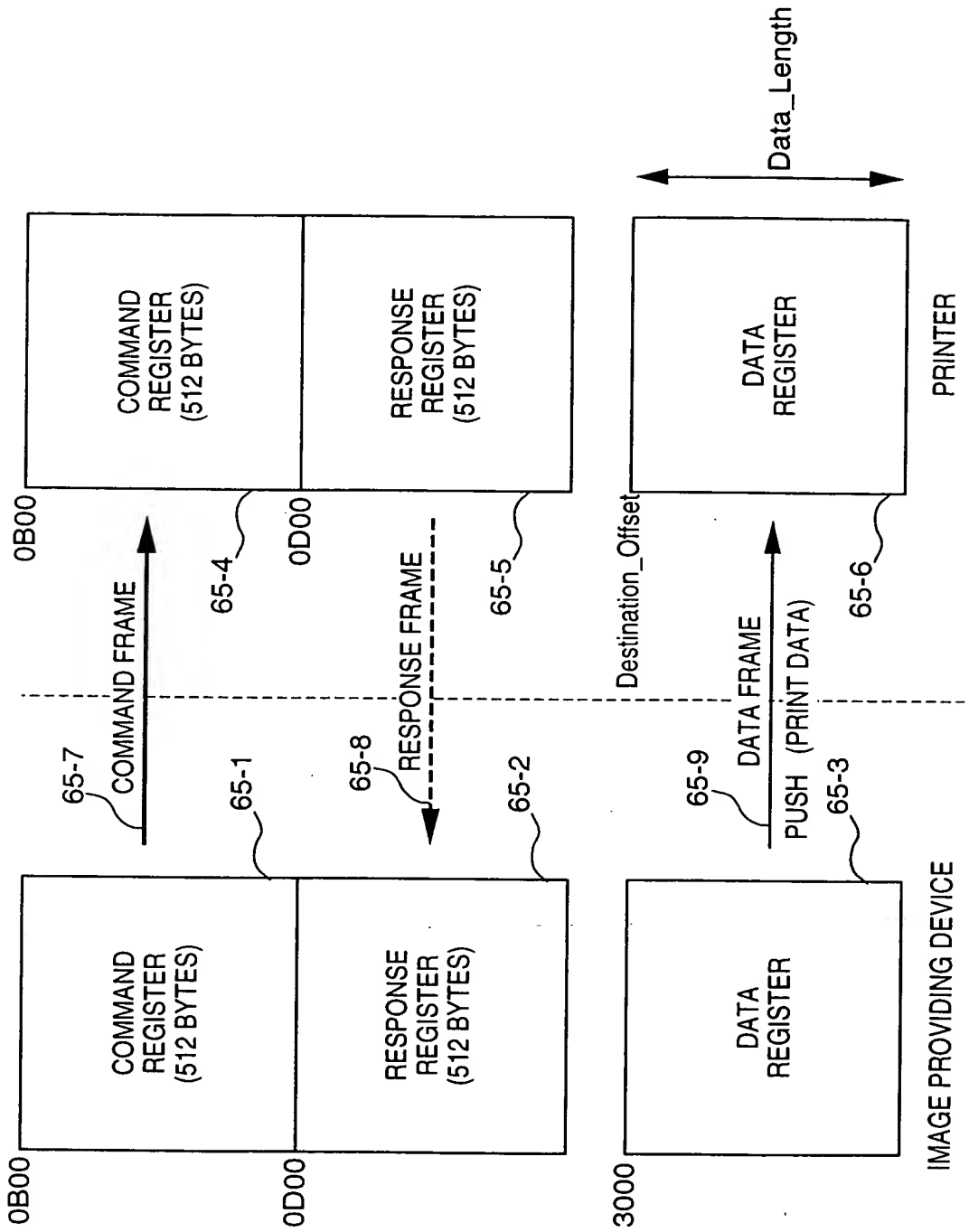

0B00
0D00
COMMAND REGISTER (512 BYTES)
RESPONSE REGISTER (512 BYTES)
IMAGE PROVIDING DEVICE
65-1
65-2
65-7
COMMAND FRAME
65-8
RESPONSE FRAME
0B00
0D00
COMMAND REGISTER (512 BYTES)
RESPONSE REGISTER (512 BYTES)
65-4
65-5
3000
DATA REGISTER
65-3
65-9
DATA FRAME
PUSH (PRINT DATA)
Destination_Offset
Data_Length
DATA REGISTER
65-6
PRINTER

FIG. 57

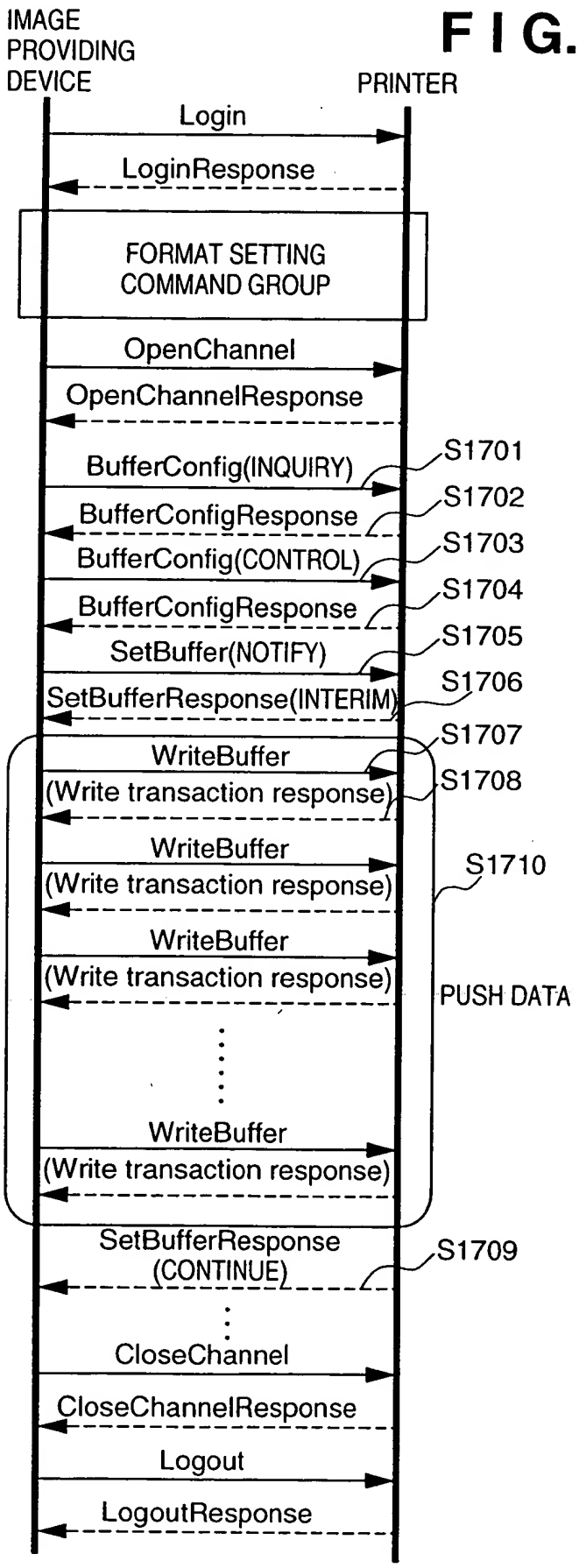


IMAGE PROVIDING DEVICE
PRINTER
Login
LoginResponse
FORMAT SETTING COMMAND GROUP
OpenChannel
OpenChannelResponse
BufferConfig(INQUIRY)
S1701
BufferConfigResponse
S1702
BufferConfig(CONTROL)
S1703
BufferConfigResponse
S1704
SetBuffer(NOTIFY)
S1705
SetBufferResponse(INTERIM)
S1706
WriteBuffer
S1707
(Write transaction response)
S1708
WriteBuffer
(Write transaction response)
S1710
WriteBuffer
(Write transaction response)
PUSH DATA
WriteBuffer
(Write transaction response)
SetBufferResponse (CONTINUE)
S1709
CloseChannel
CloseChannelResponse
Logout
LogoutResponse

FIG. 58

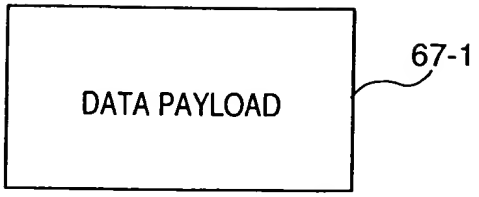

DATA PAYLOAD
67-1

FIG. 59

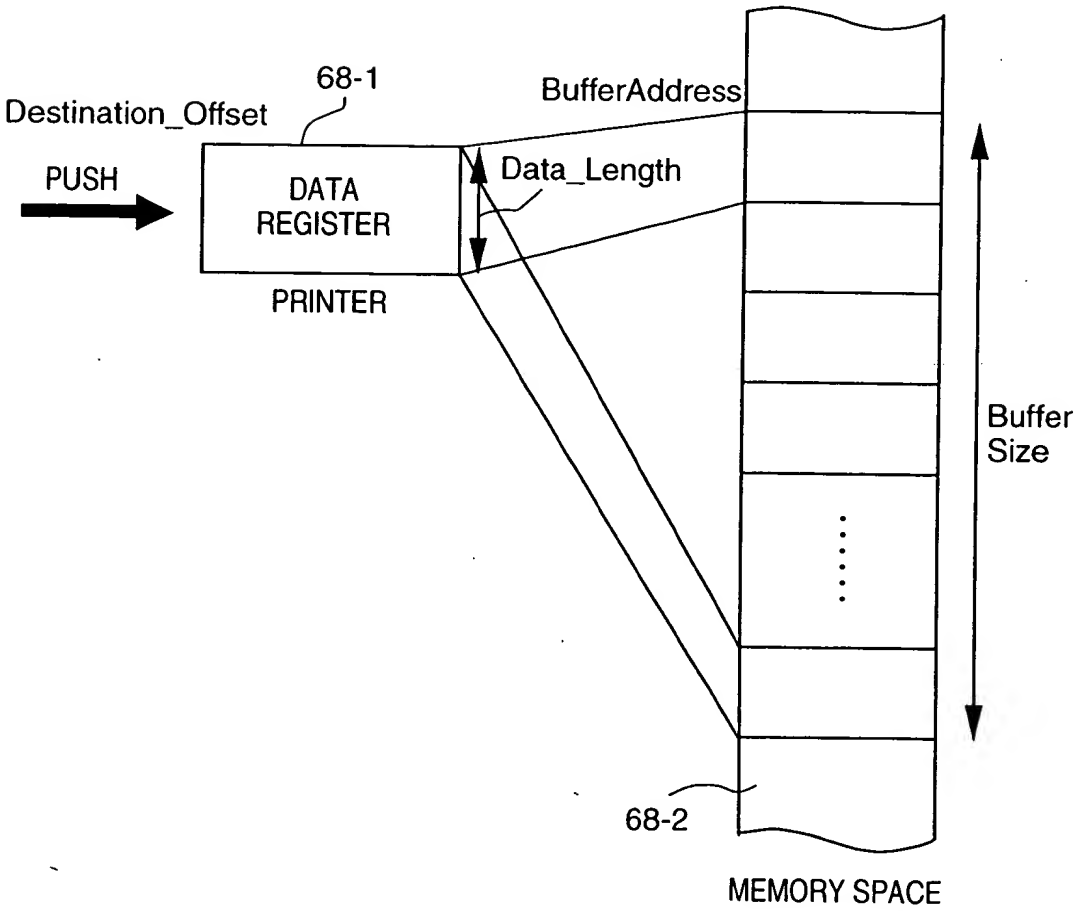

Destination_Offset
68-1
BufferAddress
PUSH
DATA REGISTER
Data_Length
PRINTER
Buffer Size
68-2
MEMORY SPACE

FIG. 60

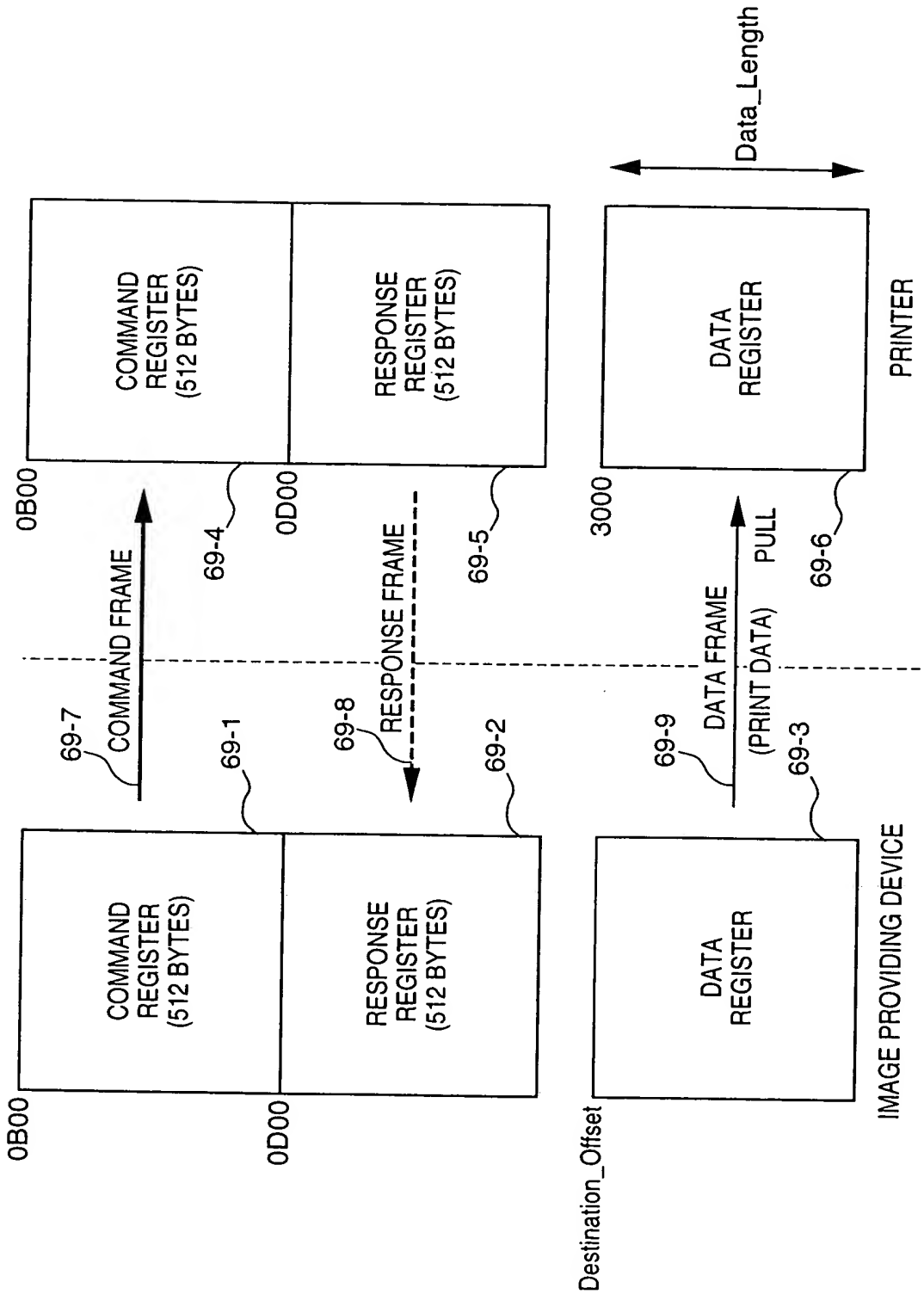

0B00
0D00
COMMAND REGISTER (512 BYTES)
RESPONSE REGISTER (512 BYTES)
69-1
69-2
69-7
COMMAND FRAME
69-8
RESPONSE FRAME
69-4
69-5
IMAGE PROVIDING DEVICE
Destination_Offset
DATA REGISTER
69-3
69-9
DATA FRAME
(PRINT DATA)
PULL
3000
DATA REGISTER
69-6
PRINTER
Data_Length

FIG. 61

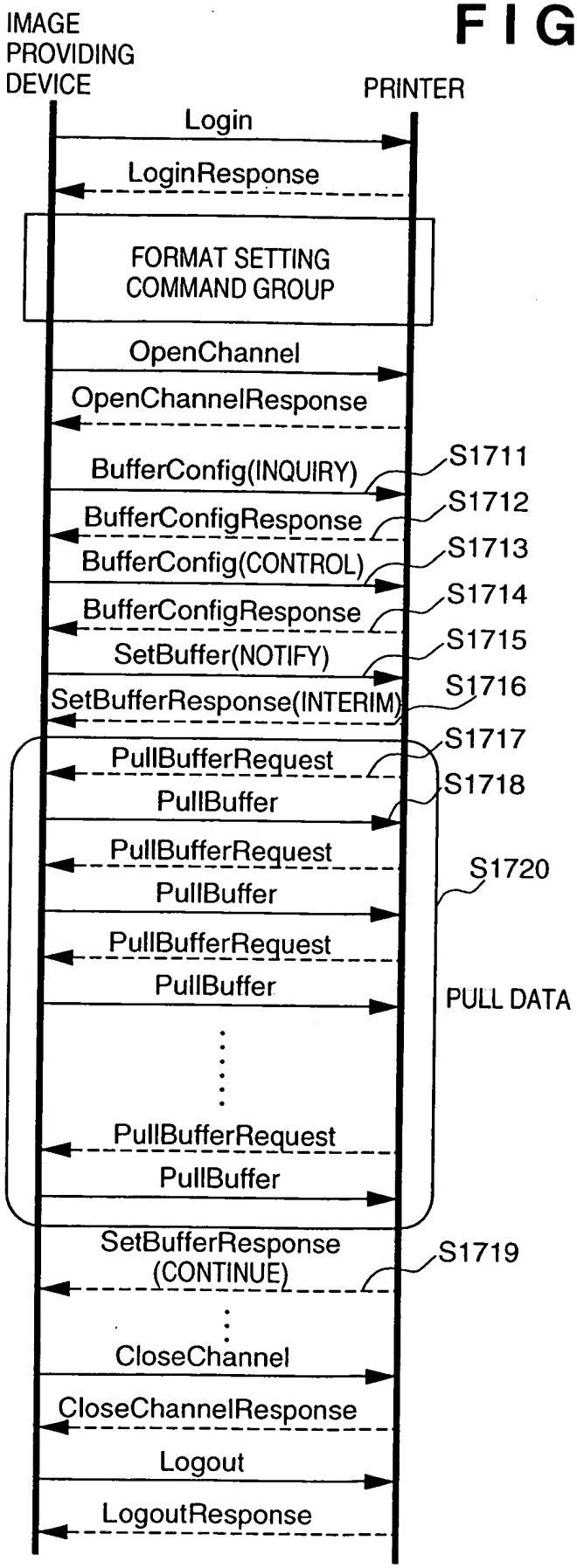


IMAGE PROVIDING DEVICE
PRINTER
Login
LoginResponse
FORMAT SETTING COMMAND GROUP
OpenChannel
OpenChannelResponse
BufferConfig(INQUIRY)
S1711
BufferConfigResponse
S1712
BufferConfig(CONTROL)
S1713
BufferConfigResponse
S1714
SetBuffer(NOTIFY)
S1715
SetBufferResponse(INTERIM)
S1716
PullBufferRequest
S1717
PullBuffer
S1718
PullBufferRequest
PullBuffer
S1720
PullBufferRequest
PullBuffer
PULL DATA
PullBufferRequest
PullBuffer
SetBufferResponse (CONTINUE)
S1719
CloseChannel
CloseChannelResponse
Logout
LogoutResponse

FIG. 62

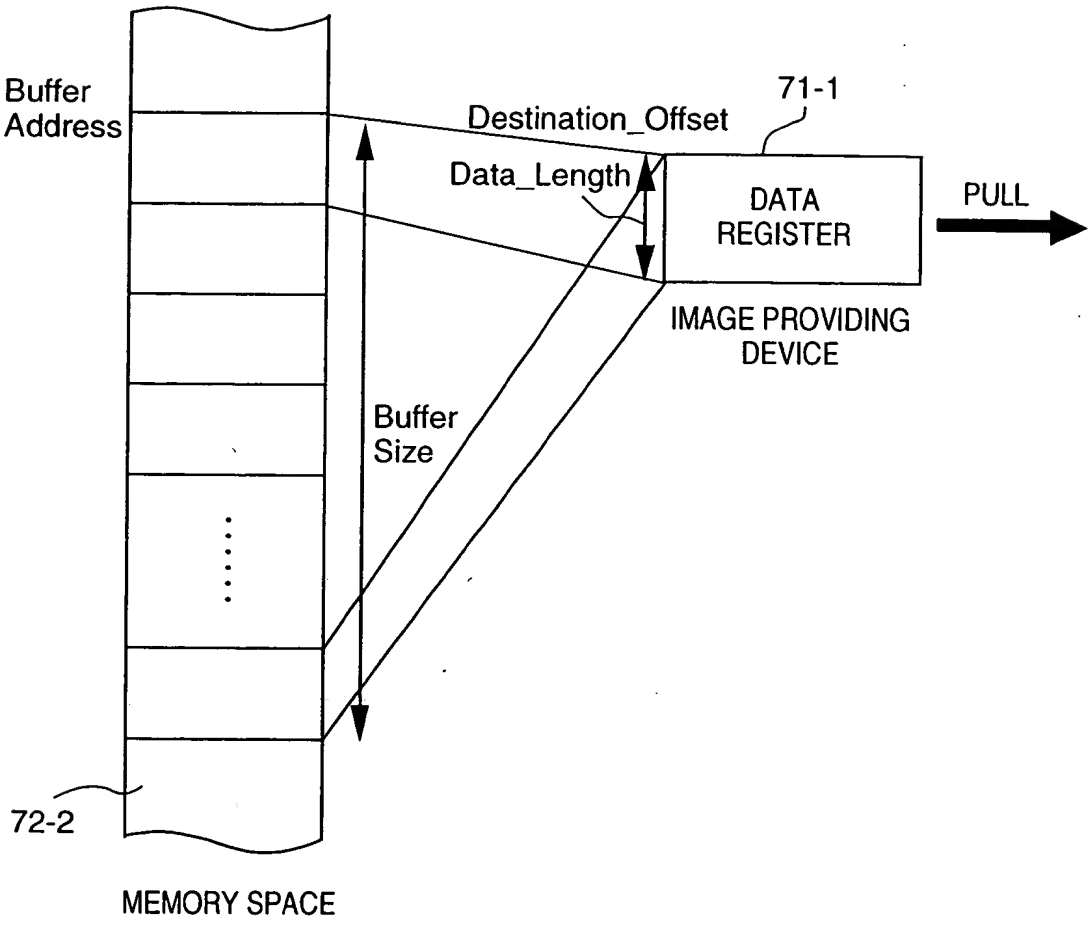

Buffer
Address
71-1
Destination_Offset
Data_Length
DATA
REGISTER
PULL
IMAGE PROVIDING
DEVICE
Buffer
Size
72-2
MEMORY SPACE

FIG. 63

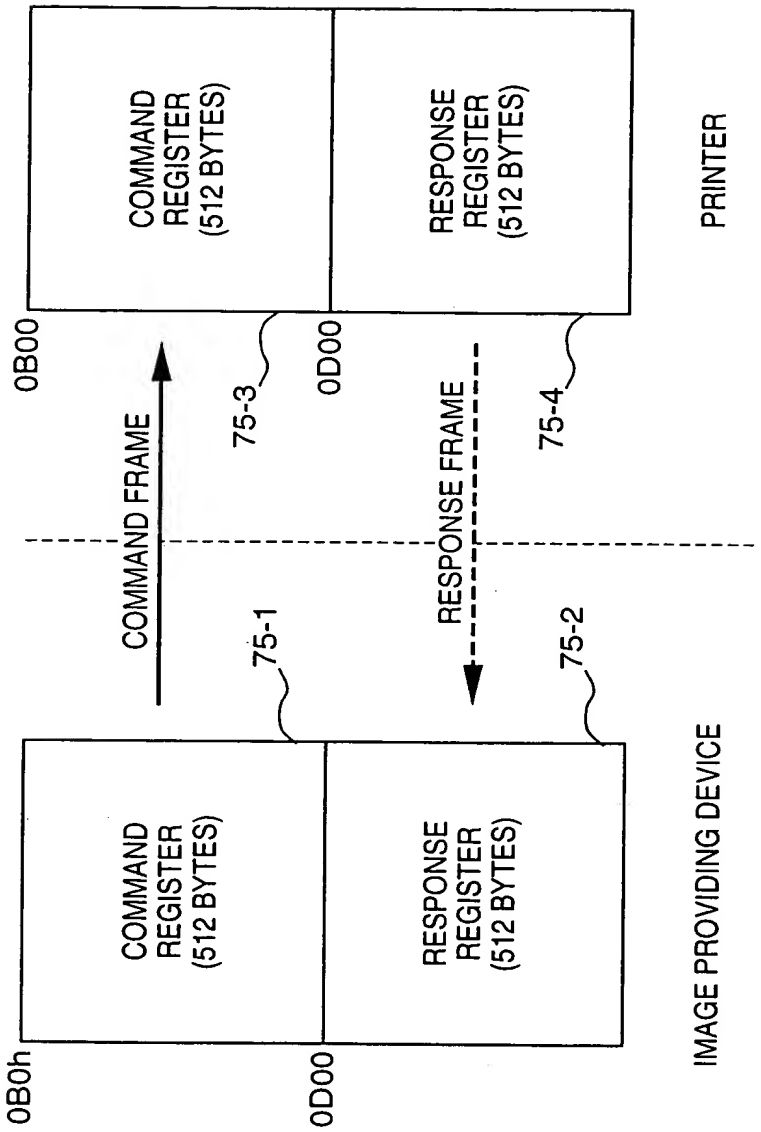

COMMAND REGISTER (512 BYTES)
RESPONSE REGISTER (512 BYTES)
PRINTER
0B00
0D00
75-3
75-4
COMMAND FRAME
RESPONSE FRAME
75-1
75-2
COMMAND REGISTER (512 BYTES)
RESPONSE REGISTER (512 BYTES)
IMAGE PROVIDING DEVICE
0B0h
0D00

FIG. 64

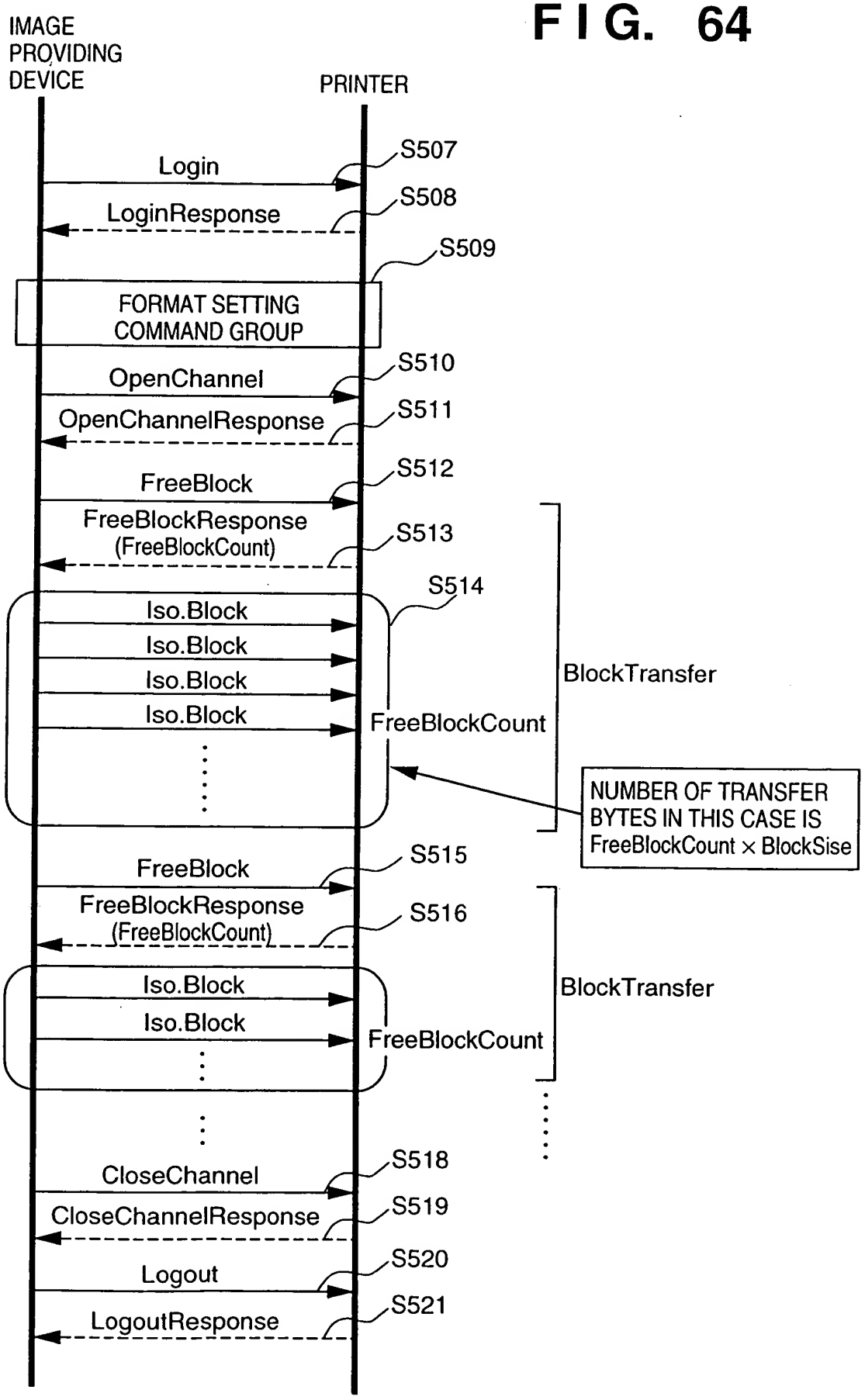


IMAGE PROVIDING DEVICE
PRINTER
Login
S507
LoginResponse
S508
S509
FORMAT SETTING COMMAND GROUP
OpenChannel
S510
OpenChannelResponse
S511
FreeBlock
S512
FreeBlockResponse (FreeBlockCount)
S513
S514
Iso.Block
Iso.Block
Iso.Block
Iso.Block
FreeBlockCount
BlockTransfer
NUMBER OF TRANSFER BYTES IN THIS CASE IS FreeBlockCount × BlockSise
FreeBlock
S515
FreeBlockResponse (FreeBlockCount)
S516
Iso.Block
Iso.Block
FreeBlockCount
BlockTransfer
CloseChannel
S518
CloseChannelResponse
S519
Logout
S520
LogoutResponse
S521